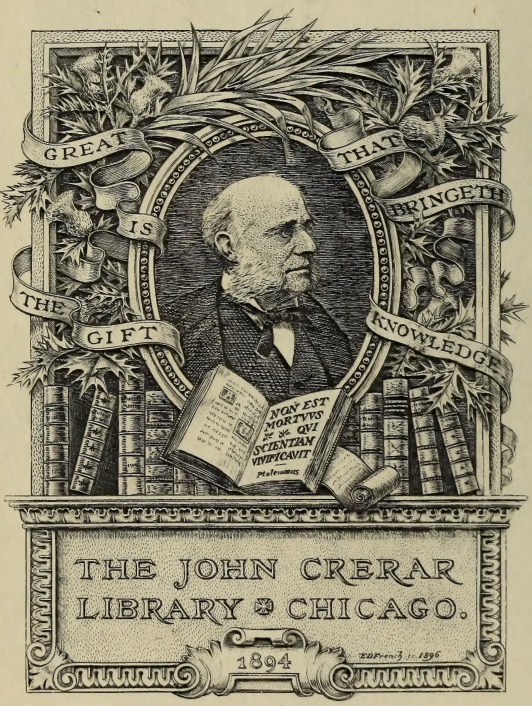
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THE COLLEGE BULLETIN

SERIES XII, No. 1
FEBRUARY, 1913

CATALOGUE
1912-1913

ALLEGHENY COLLEGE

FOUNDED IN 1815

NINETY-EIGHTH YEAR

CATALOGUE

OF

ALLEGHENY COLLEGE

FOR

1912-1913

MEADVILLE, PA.
1913

THE ALLEGHENY COLLEGE BULLETIN

PUBLISHED QUARTERLY
BY THE COLLEGE.

SERIES XII, No. 1.
FEBRUARY, 1913.

Entered as second-class matter in the postoffice at Meadville, Pa.

CATALOGUE FOR THE ACADEMIC YEAR 1912-13

AND ANNOUNCEMENTS OF COURSES FOR 1913-14

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CALENDAR.

1913.

April 24, Thursday—Founders' Day, a holiday.

30, Wednesday—Last day for presenting Senior Orations and Theses.

May 10, Saturday—Choice of Senior Speakers.

30, Friday—Memorial Day, a holiday.

June 6, 7, 9, 10—Senior Examinations.

9, 10, 11, 12, 13, 14—Second Term Examinations.

15, Sunday, 10:45 a. m.—Baccalaureate Sermon by President William H. Crawford.

7:45 p. m.—Annual Sermon before the Christian Associations.

16, 17, Monday and Tuesday—Entrance Examinations.

16, Monday, 2:00 p. m.—Class Day Exercises.

4:00 p. m.—Annual Meeting of the Phi Beta Kappa Society.

7:30 p. m.—Phi Beta Kappa Address.

9:00 p. m.—President's Reception.

17, Tuesday, 9:00 a. m.—Annual Meeting of the Board of Trustees.

4:00 p. m.—Organ Recital.

7:30 p. m.—Commencement Concert.

18, Wednesday, 9:30 a. m.—Commencement Exercises.

1:00 p. m.—Meeting of the Alumni Association. Annual Dinner.

6:00 p. m.—Fraternity Banquets.

SUMMER VACATION.

1913.

Sept. 16, Tuesday—First Term Begins.

15, 16, Monday and Tuesday—Entrance Examinations.

16, Tuesday—Registration of New Students.

17, Wednesday—Registration of Old Students.

18, Thursday, 8:00 a. m.—Recitations Begin.

Nov. 5, Wednesday—Last Day for Submitting Subjects of Senior Orations and Theses.

27, Thursday—Thanksgiving Day, a holiday.

Dec. 19, Friday, 12:30 p. m.—Recitations Close.

CHRISTMAS RECESS.

1914.

Jan. 7, Wednesday, 8:00 a. m.—Recitations Resumed.

14, Wednesday—Last Day for Presenting Senior Orations and Theses.

Jan. 21-Jan. 30—First Term Examinations.

Jan. 30, Friday, 4:00 p. m.—First Term Ends.

Feb. 3, Tuesday—Second Term Begins. Registration of Students.

4, Wednesday, 8:00 a. m.—Recitations Begin.

5, Thursday—Wakefield Oratorical Contest.

21, Saturday—Washington's Birthday, a holiday. The College Dinner.

Mar. 4, Wednesday—Last Day for Submitting Subjects of Senior Orations and Theses.

April 3, Friday, 12:30—Recitations Close.

SPRING RECESS.

April 14, Tuesday, 8:00 a. m.—Recitations Resumed.

24, Friday—Founders' Day, a holiday.

29, Wednesday—Last Day for Presenting Senior Orations and Theses.

May 11, Monday—Choice of Senior Speakers.

June 17, Wednesday—Commencement.

BOARD OF TRUSTEES.

Ex-Officio.

His Excellency JOHN K. TENER,
Governor of the Commonwealth.

Hon. James T. Mitchell,
Chief Justice of the Supreme Court.

Hon. John C. Bell,
Attorney General.

Harvey Henderson,	Pittsburgh
*William Thomas,	Meadville
John J. Henderson, LL.D.,	Meadville
Theodore L. Flood, D.D., LL.D.,	Meadville
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James P. Colter,	Meadvil e
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Rev. Andrew C. Ellis, D.D.,	Oil City
Rev. William H. Crawford, D.D., LL.D.,	Meadville
John E. Rigg, M.D.,	Wilkinsburg
Edward Appleyard,	Jamestown, N.Y.
Wesley B. Best,	Meadville
Jesse C. McDowell,	Pittsburgh
John V. Ritts,	Butler
Charles Miller,	Franklin
John S. Craig,	Pittsburgh
Austin Blakeslee,	Du Bois
Rev. Noble G. Miller, D.D.,	Blairsville

*Deceased.

TRUMAN D. COLLINS, ... Nebraska
NELSON A. RIST, ... Dawson
JOHN J. CARTER, ... Titusville
REV. J. C. MCDONALD, ... Meadville
ARTHUR L. BATES, ... Meadville
SIMPSON S. FORD, ... Cleveland, O.
ROBERT B. WARD, ... New York
C. E. WELCH, ... Westfield, N. Y.
BISHOP JAMES M. THOBURN, D.D., LL. D., Meadville
SARAH B. COCHRAN, ... Dawson
REV. ROBERT M. FRESHWATER, D.D., Madison, O.
J. A. HUSTON, ... Sewickley
GEORGE GREER, ... New Castle
BYRON A. WALKER, ... Erie
W. S. HORNER, ... Pittsburgh
REV. J. M. THOBURN, D.D., ... Ben Avon
D. E. BYLES, ... Oil City
REV. C. W. MINER, D.D., ... Sharon
IDA M. TARBELL . . . . . New York
ARTHUR M. THOMPSON, . . . Baltimore, Md.
EDWARD B. HECKEL, M.D., . . Pittsburgh
LEWIS WALKER, ... Meadville
HARRY L. DUNLAP, ... Pittsburgh

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JOHN J. HENDERSON, ... Vice-President
JAMES P. COLTER, ... Secretary

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WILLIAM H. CRAWFORD, ... Chairman
JAMES P. COLTER, ... Secretary
FRANK A. ARTER.
WESLEY B. BEST ANDREW C. ELLIS

Treasurer of the College.

GEORGE D. THOMAS.

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Francis Asbury Arter Professor of Mathematics and Surveying.

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Professor of Greek Language and Literature.

CLARENCE F. ROSS, A.M.,

Bradley Professor of Latin Language and Literature.

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Eliza Kingsley Arter Professor of English Language and Literature.

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James M. Thoburn Professor of English Bible and Philosophy of Religion.

CHARLES J. LING, Ph.D.,

Mary M. Newton Professor of Physics and Astronomy.

OSCAR P. AKERS, Ph.D.,

Professor of Mathematics.

R. EDWIN LEE, Sc.D.,

Professor of Chemistry.

GUY E. SNAVELY, Ph.D.,

Professor of Romance Languages and Literatures.

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Instructor in Public Speaking.

DEAN OF WOMEN.

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Alumni Professor of History and Economics.

DAVID L. DUNLAP, B.Sc., M.D.,

Physical and Athletic Director.

IRWIN R. BEILER, S.T.B.,

Acting Professor of English Bible and Philosophy of Religion.

CHARLES E. DECKER, A.M.,

Assistant Professor of Biology and Geology.

STANLEY S. SWARTLEY, A.M.,

Instructor in English.

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* Absent on leave, Sabbatic year.

EDITH ROWLEY, A.B.,
Librarian.

MALCOLM H. DEWEY, A.M.,
Instructor in German.

LAURENCE M. RIDDLE, A.M.,
Instructor in French.

MARGARET HYDE BEEBE, A.B.,
Instructor in Greek and Latin.

EDWARD J. B. PALMER, B.S.,
Instructor in Chemistry.

FRANK O. AMON, A.B.,
Graduate Laboratory Assistant in Chemistry.

BEN H. BALL,
Laboratory Assistant in Physics.

WALTER H. FEGELY,
Laboratory Assistant in Chemistry.

F. CECIL FIRST,
Laboratory Assistant in Biology.

COMMITTEES OF THE FACULTY.

Registration.

THE PRESIDENT — THE REGISTRAR
PROFESSOR ROSS — PROFESSOR BREED
MR. BEILER

Courses of Study.

PROFESSOR ELLIOTT — PROFESSOR DUTTON
PROFESSOR LOCKWOOD — PROFESSOR MULFINGER
PROFESSOR LING

Discipline.

THE PRESIDENT — PROFESSOR DUTTON
PROFESSOR ELLIOTT

College Organizations.

PROFESSOR AKERS — PROFESSOR ROSS
PROFESSOR LOCKWOOD

Library.

PROFESSOR LOCKWOOD — PROFESSOR MULFINGER
PROFESSOR ELLIOTT

Graduate Instruction.

PROFESSOR BREED — PROFESSOR SNAVELY

Athletics and Gymnasium.

PROFESSOR LEE — PROFESSOR DUTTON
MR. DEWEY

Accredited Preparatory Schools.

PROFESSOR ROSS — PROFESSOR LING
PROFESSOR BENJAMIN

College Book Store.

PROFESSOR LEE

Catalogue.

PROFESSOR SNAVELY — PROFESSOR BENJAMIN
PROFESSOR DECKER

College Council.

PROFESSOR LING — PROFESSOR AKERS

Men's Dormitories

DR. DUNLAP — PROFESSOR LING
MR. DEWEY

DESCRIPTION OF THE COLLEGE.

HISTORICAL SKETCH.

Allegheny College was founded in 1815 by citizens of Meadville, then a frontier village of some three or four hundred inhabitants. The first president was the Rev. Timothy Alden, a Presbyterian minister. The institution was chartered in 1817, and in 1820 the corner stone of the first building, Bentley Hall, was laid. In 1831 Dr. Alden resigned, and in 1833 the Rev. Martin Ruter of the Pittsburgh Conference of the Methodist Episcopal Church, was elected to the presidency. The institution, while pronouncedly Christian, is conducted as the charter requires, on liberal principles, no person having any advantage, or being subjected to any disadvantage, on account of his religious views.

LOCATION.

Allegheny College is located in Meadville, Pennsylvania, on the main lines of the Erie, and Bessemer & Lake Erie railroads. An electric road gives direct connection with Erie and intervening points. Meadville has a population of more than twelve thousand. It is an old and well established town with attractive streets and residences, cultured society, and many educational influences. Being largely a residential town it has few of the disadvantages of city life. It has most of the advantages of a city, such as paved streets, an effective sewerage system, an abundant

supply of wholesome water from driven wells, arc and incandescent electric lights, natural gas, and an electric street railroad connecting all parts of the town with the college grounds.

The surrounding country is remarkable for its beautiful and diversified scenery. Within a short radius are some twenty miles of wild and rugged ravines of exceeding beauty, and the foothills of the Alleghenies which surround the town make the situation one of great attractiveness. The neighborhood is especially rich in material for the study of Botany and Geology.

BUILDINGS AND GROUNDS.

The college campus contains sixteen acres on the north edge of the town, nearly a mile from the business section, at an elevation of two hundred feet above French Creek and twelve hundred feet above the sea. It is abundantly shaded by numerous varieties of trees, many of them planted by students nearly a century ago. The ravine which passes through the campus and the situation overlooking the town and the valley for miles below, give a natural beauty hardly surpassed. The grounds are well provided with granolithic walks, and both grounds and buildings are kept in an attractive and sanitary condition.

The heating plant, situated in the upper ravine, supplies steam heat to all the college buildings. It is entirely adequate to the needs of the College.

Bentley Hall bears the name of the Rev. William Bentley, D.D., of Salem, Massachusetts, who gave his valuable library to the College. The corner stone

was laid in 1820. It consists of a central three-story building with tower, and two wings with massive pillars. The building contains the administration offices of the College and recitation and lecture rooms. The third floor is devoted to the halls of the literary societies with their libraries.

During the summer of 1905 extensive improvements were made in the interior of the building. New hard wood floors and oak wainscoting were put in, and new furniture throughout has been provided. These changes, made at a cost of about seven thousand dollars, have rendered the building very attractive and entirely modern without lessening its charm as a fine example of colonial architecture.

Ruter Hall, which bears the name of the Rev. Martin Ruter, D.D., the second president of the College, is a substantial brick building, erected in 1855, chiefly by the citizens of Meadville. On the first floor is the geological museum of the College. On the second floor are recitation rooms, a drawing room, an instrument room, and an office, used by the departments of Mathematics and Civil Engineering. The third floor is occupied by the department of Biology. Two laboratories, an office, a store room, a library and a lecture room occupy this floor.

Hulings Hall, a four-story brick building, ninety-four by one hundred forty feet, was erected in 1881, by Mr. Marcus Hulings, of Oil City, and citizens of Meadville. It is used as a home for young women, and accommodates about eighty. The building is well lighted and ventilated, is provided with fire escapes, and is in thoroughly good sanitary condition. It has recently been almost entirely refurnished. The rear

wing of the building contains on the fourth floor five large society halls; the first and second floors are occupied by the gymnasium for young women. The gymnasium has a clear floor space fifty-four by forty feet and is finished throughout in Georgia pine. It is provided with a full line of modern apparatus. In the basement are dressing rooms and baths.

Wilcox Hall of Science, named for Mr. and Mrs. Robertson Wilcox, of Girard, Pa., is a modern brick building built in 1892 for the department of Physics. It contains an amphitheatre lecture-room, seating one hundred students, physical laboratories, and a basement work shop. There are ten working rooms. In the construction of the building especial care was taken to provide abundant light.

The Gymnasium, erected in 1896, adjoins the athletic field. It is in the early Italian style of round arched architecture, and is constructed of native stone and brick. The building is T-shaped in plan, the front portion being two stories high, exclusive of the tower. The first floor contains the director's room, locker rooms, and baths. On the second floor there is an assembly room, and also a committee room, both for general use. The gymnasium floor, which occupies the rear extension, has a clear space of forty-five by eighty feet unobstructed by pillars, the roof being supported by steel trusses. The building is equipped with the appointments of a first class modern gymnasium.

Newton Observatory, completed in 1901, was made possible by the gift of Mrs. Mary M. Newton, of Batavia, Illinois, in memory of her husband, Captain D. C. Newton, once a student in the College. It is a

rock-faced stone building of fine architectural appearance, containing in addition to the observing room, a transit room, a computing room, and the director's office.

Ford Memorial Chapel was erected in 1901-2 through the generosity of Captain John B. Ford, of Creighton, Pa., in memory of his wife. The cost of the building was $34,000. It is of rock-faced Cleveland sandstone, in Gothic Romanesque style, with a spacious auditorium seating four hundred fifty, besides a gallery seating one hundred fifty, and an oratory seating one hundred fifty. The rich stained glass windows and the harmonious interior appointments add much to the stateliness of the building.

The chapel is provided with a splendid pipe organ, the gift of the granddaughters of Captain Ford, Mrs. J. A. Ballantyne and Misses Nellie and Stella Ford, who contributed $6,000 for this purpose. The organ was designed by Mr. W. L. Mayer, of Pittsburgh, and was built by the late Julius Neef, of Philadelphia. It has three manuals, and 1,920 pipes, and is supplied with the best devices of great modern organs.

The Library Building, the gift of an anonymous donor, was completed in 1902 at a cost of over $40,000. Its dimensions are eighty-five by seventy-four feet. It is constructed of vitrified brick with terra cotta trimmings, in Italian-Renaissance style. In addition to the stack room with a capacity of sixty thousand volumes, it contains a cataloguing room, librarian's rooms, general reading room, and a large reference reading room. On the second floor are the faculty room and department seminar rooms. The interior

appointments of the library are entirely in accord with the artistic character of the building.

Alden Hall. This building is one of the latest additions to the group of college buildings, and is devoted to the use of the department of Chemistry. It is built of gray vitrified brick and terra cotta, in English school style, with three floors and a basement. The building is commodious and well lighted. It contains ten rooms, and is well equipped with such apparatus as is necessary to the successful prosecution of work in the department.

Cochran Hall. By the generous gift of Mrs. Sarah B. Cochran, of Dawson, Pa., amounting to over sixty thousand dollars, provision has been made for a College Commons for young men. The building is constructed of brick with light terra cotta trimmings and tile roof. The architecture is of the Italian villa style with simple dignified lines, making the building, as a whole, the most imposing of the entire college group. The building contains on the first floor a reception hall, a main dining room, and a large lounging room for general purposes. The second floor is devoted to students' studies, sleeping rooms, and baths, and to a guests' suite. The building not only provides first class boarding accommodations, and at reasonable rates, but constitutes a rallying center for the young men of the College. Apart from the dining room and dormitory features of the building there are rooms for the Young Men's Christian Association which are admirably adapted to their purpose. In addition to the spacious room to be used as assembly, reading, and social room there are an office for the secretary, a committee room, and a cloak room. Just off these

apartments are four bowling alleys with shuffle board spaces adjoining.

LABORATORIES AND MUSEUM.

The Physical Laboratory. The department of Physics occupies Wilcox Hall of Science. It comprises a large, well-lighted lecture-room, a general laboratory, special laboratories for heat, light and electricity, two dark rooms, the professor's office, and department library and store room. The lecture-room is well adapted to the giving of illustrated lectures; and the department has a very complete projection outfit and a good collection of slides. The department has also the facilities for the construction of special pieces of apparatus needed in the laboratory.

The Chemical Laboratories. The department of Chemistry occupies the building known as Alden Hall. It consists of ten rooms and is devoted in its entirety to the uses of this department. On the first floor are located the private office and laboratory of the head of the department, balance room, laboratory for quantitative and gas analysis, reading room containing the department library, and a large well-ventilated lecture-room with complete equipment for experimental and illustrated lectures. On the second and third floors are found separate laboratories for general chemistry, organic chemistry, analytical chemistry, physical chemistry, and a dark room for photo-chemistry. In the basement are located the store room and laboratory preparation room.

All the laboratories are well lighted and ventilated, and amply provided with facilities for various kinds of chemical work.

The Astronomical Observatory is equipped with a nine-inch equatorially mounted telescope, the objective of which was a gift of Mr. J. C. McDowell, of Pittsburgh, and was made by Brashear, of Allegheny, Pa. The graduated silver circles for this telescope were given by Mrs. Elizabeth Whiting of Meadville. A seven and one-half inch instrument, made by Alvin Clark and Son, is also included in the equipment. Other equipment includes a transit, a chronometer, a sextant, and a siderial clock. The clock is the gift of the children of Milton B. Goff, LLD., in memory of their father, an alumnus and former professor of mathematics in the College. The mountings and other fixtures of the observatory were supplied by Messrs. Warner and Swasey, Cleveland, O.

Through the generosity of Colonel J. J. Carter, of Titusville, Pa., there has been added to the equipment of the observatory an elaborate filar micrometer for use with the nine-inch, designed and made by George N. Saegmuller, of the Bausch-Lomb-Saegmuller Co., of Rochester, N. Y. From the same source comes a high grade six-inch mining transit fitted with a Saegmuller solar attachment and a Shattuck solar attachment, thus enabling the department to prosecute field work in astronomy which is of value to engineers. A chronograph, made by Gaertner, of Chicago, and a break circuit attachment for the clock complete the new equipment which will enable the department to offer work to the student that will be comparable with other observatories having a glass of like magnitude.

Engineering Apparatus. In Mathematics and Engineering all necessary instruments, such as tran-

sits, levels, rods, and chains, for illustrating pure and applied mathematics are provided and are in practical use by the students in these subjects.

The Biological Laboratories are placed on the third floor of Ruter Hall where there is ample space and good light. The main laboratory receives the direct north light and is fitted with tables and microscopes for twenty students. In the same room are placed a large aquarium table fitted with running water, other tables for balanced salt and fresh water aquaria, and cases containing the herbarium and other material used in the laboratory work. The other half of the floor is divided into a lecture room, an office, a store room, and a smaller laboratory for advanced students. The lecture room contains cases for a collection of animals, charts, models, etc., used in lectures. The library, consisting of three hundred well selected volumes, is placed in two cases, one in the larger and one in the smaller laboratory. The smaller is fitted with all needed histological, embryological, and bacteriological apparatus.

The Geological Laboratory. During the past few years this department has used the biological laboratories for geological and mineralogical laboratory work. A small adjoining room has been fitted up for a geological library and serves also for the storage of the topographical maps and other supplies used in the laboratory work. A fine new polarizing microscope has just been purchased and the nucleus of a collection of rock slides started.

The Collections of the Natural History Museum are placed on the first and third floors of Ruter Hall.

The geological and mineralogical collections are especially noteworthy and contain many valuable specimens including some type forms. The mineralogical collections have been entirely rearranged and relabeled during the past few years and the more than eight thousand specimens form one of the finest collections to be found in the entire state and serve as a splendid basis for the course in mineralogy recently introduced. The geological collections include the Smithsonian collection of rocks and rock-forming minerals as well as many other specimens, while the paleontological collection includes the series of Ward casts and many originals. Within the past few years, the nucleus of an exceedingly interesting and valuable collection of local fossils has been obtained largely through the efforts of William Millward, of the Class of 1909.

The zoological collections consist of several thousand specimens which are kept in cases on the first and third floors. The collections of invertebrates preserved in liquid, shells, and mounted birds are all very useful for the courses in Zoology. A herbarium which includes most of the local flora is placed on the third floor.

The museum is open to the public every Saturday, while the College is in session, from one to three p. m. At other times visitors are admitted on application to the custodian.

THE LIBRARY.

The Library contains 27,500 bound volumes, 3,500 volumes of periodicals and a large number of unbound pamphlets, in all about 38,000 printed productions. The additions to all departments for 1911-12 were 1,825. The books are classified according to the dec-

imal system. A dictionary card catalogue and other modern facilities for convenient use are provided. The reference room shelves about 2,000 volumes of books "reserved" for the various departments together with the dictionaries, encyclopedias and general reference works. These are in the latest editions and new works are added each year.

The administration aims to make the Library not only an auxiliary to the class instruction, but the center of the intellectual life of the College. The classical, literary and scientific clubs have headquarters in the building and rooms are set aside for advanced classes studying along special lines. The rules are such as will allow the widest use of the books with only such necesary restrictions as will secure the greatest good to the greatest number. The reading room regularly receives nearly one hundred periodicals, including local papers, dailies, and the best weeklies both religious and secular. An exchange table of college publications is supplied by the Campus and the Literary Monthly.

The Library is a government depository and also receives the state publications. Each department has an annual appropriation for the purchase of the latest technical and reference works. The access to such a wide range of books and periodicals, the training in the use of catalogues, bibliographies and reference works, and the wide range of technical and general periodical literature available are of great advantage to the student. A book service is maintained with the Carnegie Library of Pittsburgh by which almost any book not available here may be secured quickly and at slight expense to the student. Exchange relations are

also maintained with several other libraries. The Meadville Theological School extends library privileges to this College, and the students have access to the Meadville Public Library containing over 12,000 catalogued volumes.

The Library is open during the college year from 8 a. m. to 5:30 p. m. and three evenings a week.

GENERAL PURPOSE.

This institution is a college, not a university. It therefore does not undertake to fit the student to enter any profession without further technical study. In all departments of instruction the end sought is not specialization but thorough discipline and correct habits of observation and reflection. It is on this principle that the curricula are based. Under the various groups about three-fourths of the subjects are prescribed. These studies are such as have been found to be best adapted to secure symmetrical development. A wide range of electives is offered, enabling the student to lay the foundation for subsequent professional study. By a wise choice of electives a student may in some cases shorten by a year the time required to complete his professional course. The experience of the college proves that its graduates are enabled to distinguish themselves in various careers whenever they have added to their college training the special equipment for a profession.

A large portion of college graduates enter not upon professional but upon business life. The general principle above stated applies to them with as much force as to those who enter professions. A college training does not teach a man how to do business successfully, but it does prepare him to learn any business rapidly, and to attain large success, if he has the requisite talent.

REQUIREMENTS FOR ADMISSION.

The requirements for admission are stated in terms of units. *A unit is defined as a course of study that has been pursued for a school year of at least thirty-six weeks, with four or five periods per week of not less than forty minutes each. However, not less than one hundred twenty periods of sixty minutes each or their equivalent shall be counted a unit.*

No science subject may be credited for entrance unless accompanied by satisfactory evidence of laboratory or field work. Exception may be made in the case of physiology.

Subjects accepted for entrance:

	Minimum.	Maximum.
English	3	4
Mathematics	2½	4
Foreign Language	4	7
Latin		
Greek		
French		
German		

Not less than two units in any language will be credited, unless continued further in college.

History	1	3
Ancient	..	1
Mediaeval and Modern	..	1
English	½	1
United States	½	1
Civics	..	½

Drawing		
Free Hand	..	½
Mechanical	..	½
Science	1	3
Biology	½	1½
Chemistry	..	1
Physics	..	1
Physiography	..	½
Geology	..	½

Not more than one unit of Biology may consist of General Zoology or Botany. Physiology may count as much as one half unit.

From the preceding list of units 15 must be offered for entrance to the freshman class. Of these 11½ units are absolutely required and 3½ may be elected from any of the units in the foregoing list.

The 11½ required units are as follows:

English	3
Mathematics	2½
Science	1
History	1
Foreign Language	4

For admission to Groups I. and II., these 4 units must be in Latin; to Groups III. and IV., two units must be in Latin; to Groups V., VI., VII., and VIII., there is no restriction concerning the Latin.

The various Groups are described on pp. 40-45.

For conditional admission in the aforementioned Latin prerequisite see page 76.

DESCRIPTION OF UNIT REQUIREMENTS.

ENGLISH. The following is a definition of Units one, two, three and four, respectively, that may be offered as entrance credits in English:

(Unit one) Composition and Rhetoric.

(Units two and three) Reading from the list of required Readings below.

(Unit four) A history of English literature, with additional readings from the English classics.

Reading and Practice. A limited number of books are assigned for reading. The candidate is required to present evidence of a general knowledge of the subject-matter of these books, and to answer simple questions on the lives of their authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and calls for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified to by his instructor, containing compositions or other written work done in connection with the reading of books. In preparation for this part of the requirement it is important that the candidates shall have been instructed in the fundamental principles of rhetoric.

The books set apart for the examination will be:—

In 1913—Group 1 (two to be selected), The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; Homer's Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; Homer's Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's Aeneid. The Odyssey, Iliad, and Aeneid should be read in English translations of recognized literary excellence. For

any unit of this group a unit from any other group may be substituted.

Group 2 (two to be selected), Shakespere's Merchant of Venice, Midsummer-Night's Dream, As You Like It, Twelfth Night, Henry V, Julius Cæsar.

Group 3 (two to be selected), Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; Scott's Ivanhoe, or Quentin Durward; Hawthorne's House of the Seven Gables; Dickens' David Copperfield, or Tale of Two Cities; Thackeray's Henry Esmond; Mrs. Gaskell's Cranford; George Eliot's Silas Marner; Stevenson's Treasure Island.

Group 4 (two to be selected), Bunyan's Pilgrim's Progress, Part I; The Sir Roger de Coverley Papers in the Spectator; Franklin's Autobiography (condensed); Irving's Sketch Book; Macaulay's Essay on Lord Clive, and Essay on Warren Hastings; Thackeray's English Humorists; Selections from Lincoln, including at least the two Inaugurals and Lincoln's Speeches in Independence Hall and at Gettysburg, Last Public Address, Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's Oregon Trail; Thoreau's Walden, or Huxley's Autobiography, and Selections from Lay Sermons, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; Stevenson's Inland Voyage, and Travels with a Donkey.

Group 5 (two to be selected), Palgrave's Golden Treasury (First Series) Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's Elegy in a Country Churchyard, and Goldsmith's Deserted Village; Coleridge's Ancient Mariner, and Lowell's Vision of Sir Launfal; Scott's Lady of the Lake; Byron's Childe Harold, Canto IV, and The Prisoner of Chillon; Palgrave's Golden Treasury (First Series) Book IV, with especial attention to Wordsworth, Keats and Shelley; Poe's Raven; Longfellow's Courtship of Miles Standish, and Whittier's Snow Bound; Macaulay's Lays of Ancient Rome, and Arnold's Sohrab and Rustum; Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good

News from Ghent to Aix, Home Thoughts from Abroad; Home Thoughts from the Sea; Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, and Up at a Villa—Down in the City.

Study and Practice. A smaller number of books are assigned for more careful study. The examination based on these books covers subject-matter, form, and structure, and also tests the candidate's ability to express his knowledge with clearness and accuracy. In addition, the candidate may be required to answer questions involving the essentials of English grammar and questions on the leading facts in those periods of English literary history to which the prescribed works belong.

The books set for this part of the examination will be:—

In 1913—Shakespere's Macbeth; Milton's L'Allegro. Il Penseroso, and Comus; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address, and Webster's First Bunker Hill Oration; Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

MATHEMATICS.—*Elementary Algebra.* (One unit or one and one half units.) The work in this subject should include the following: fundamental operations, factors, common divisors and multiples, involution including the binomial theorem for positive integral exponents, radicals, quadratic equations, ratio and proportion, theory of exponents, and arithmetic and geometric series.

A maximum of one and a half units may be given when the time spent in preparing to meet this requirement be at least a year and a half. It is suggested that the work of the last half year should be done late in the preparatory school course to insure a distinct and ready articulation with the required work of the freshman year in college. It is desirable that the student should come to his college work with well formed habits of neatness and accuracy, and that he have a ready knowledge of so much of mathematics as he may have studied.

Plane Geometry. (One unit.) The general properties of rectilinear figures, similar polygons, areas, and the measure-

ment of polygons and the circle; the solution of original exercises, including loci problems.

Solid Geometry. (One half unit.) The relation of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, cones, and the sphere; the solution of original exercises, including loci problems.

Advanced Algebra. (One half unit.) A somewhat more extended treatment in review of the important topics of Elementary Algebra; such as fractional and negative exponents, radicals, factoring, the theory of quadratic equations (including maximum and minimum, and simultaneous quadratic equations), ratio, proportion, the progressions and the binomial theorem for positive integral exponents. In addition to these, the following topics should be included: permutations and combinations, undetermined coefficients, partial fractions, logarithms, theory of equations, including Horner's method, and the solution of numerical equations of higher degree.

Plane Trigonometry. (One half unit.) The definitions and relations of the six trigonometric functions as ratios, proofs of formulas, especially those for the sine, cosine and tangent of the sum or difference of two angles, the relation between functions of an angle and those of double angles and half angles, inverse functions, and the solution of right and oblique triangles with applications.

LATIN.—The following requirements, as proposed by the Commission on College Entrance Requirements in Latin, have been adopted by the College:

I. AMOUNT AND RANGE OF THE READING REQUIRED.

1. The Latin reading required of candidates for admission to College, without regard to the prescription of particular authors and works, shall be not less *in amount* than Caesar, Gallic War, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneiod, I-VI.

2. The amount of reading specified above shall be selected by the schools from the following authors and works: Caesar (Gallic War and Civil War) and Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust, (Catiline and

Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid) and Ovid (Metamorphoses, Fasti, and Tristia).

II. SUBJECTS AND SCOPE OF THE EXAMINATIONS.

1. *Translation at Sight.* Candidates will be examined in translation at sight of both prose and verse. The vocabulary, constructions, and range of ideas of the passages set will be suited to the preparation secured by the reading indicated above.

2. *Prescribed Reading.* Candidates will be examined also upon the following prescribed reading: Cicero, orations for the Manilian Law and for Archias, and Vergil, Aeneid, I, II, and either IV or VI at the option of the candidate, with questions on subject-matter, literary and historical allusions, and prosody. Every paper in which passages from the prescribed reading are set for translation will contain also one or more passages for translation at sight; and candidates must deal satisfactorily with both these parts of the paper, or they will not be given credit for either part.

3. *Grammar and Composition.* The examinations in grammar and composition will demand thorough knowledge of all regular inflextions, all common irregular forms, and the ordinary syntax and vocabulary of the prose authors read in school, with ability to use this knowledge in writing simple Latin prose. The words, constructions, and range of ideas called for in the examinations in composition will be such as are common in the reading of the year, or years, covered by the particular examination.

The credits given are as follows: Elementary Latin Book, such as Collar and Daniell or Bennett, including the reading of at least fifteen pages of easy connected prose, such as Viri Romae, one unit; Caesar with composition, one unit; Cicero with composition, one unit; Vergil, one unit.

GREEK.—(One unit.) First Greek Book and at least six chapters of Book I of Xenophon's Anabasis.

(One unit.) Xenophon's Anabasis through Book IV. Xenophon's Anabasis, Books V, VI, and VII, or Xenophon's Hellenika, Books I and II, or twelve hundred lines of Homer. Prose composition based on the texts read.

(One unit.) Homer's Iliad or Odyssey, about three thousand lines. Thorough knowledge of poetic forms and prosody About thirty pages of Attic prose with composition based thereon.

Throughout the work in Greek emphasis should be laid on accurate knowledge of forms and the ordinary rules of syntax, on the ability to read Greek aloud correctly and expressively, and on the ability to write rapidly and correctly in Greek simple English sentences based on the texts read.

Students expecting to enter Greek I in College should offer at least two units of entrance Greek. Students without Greek for entrance may begin the subject in Greek A and in one year be prepared to enter Greek I.

GERMAN.—(One unit.) The first year's work should comprise: careful drill in pronunciation, dictation, memorizing of easy colloquial sentences, drill in the rudiments of grammar, i. e., the inflection of nouns, adjectives, pronouns, weak verbs, and the more usual strong verbs; the use of prepositions; the simplest rules of syntax and word order; simple exercises in conversation; and the reading of from seventy to one hundred pages of a graduated text from a reader or from editions of easy texts.

2. (One unit.) The second year's work should comprise: the reading of one hundred fifty to two hundred pages of literature in the form of easy stories and plays; a further study of syntax; conversation based on the text read; practice in the translation into German of easy variations upon the matter read, and also in off-hand reproduction, sometimes orally and sometimes in writing, of the substance of selected passages.

3. (One unit.) The work of the third year includes, in addition to the courses above, the reading of about four hundred pages of moderately difficult prose or poetry, with constant practice in giving, sometimes orally, sometimes in writing, abstracts, paraphrases, or reproductions from memory of selected portions of the matter read; also grammatical drill upon the less usual strong verbs, the use of the article, cases, uses of the subjunctive and infinitive, complex sentence

structure, uses of modal auxiliaries and participial constructions.

4. (One unit.) The fourth year of the study should be devoted to such works as Goethe's Iphigenie, Tasso, Hermann und Dorothea, Schiller's Wallenstein, standard prose of the grade represented by Freytag or Keller, some consideration of the chief lyric poets, prose composition, and some practice in theme writing.

FRENCH.—(One unit.) First year French should comprise the following: (1) Careful drill in pronunciation, which should be re-enforced by dictation and conversation in the class-room. (2) Study of the Grammar, including the more usual irregular verbs; the grammar work in Part I of Fraser and Squair's French Grammar would be sufficient. (3) Regular practice in putting simple idiomatic sentences into French. (4) Reading of about two hundred duodecimo pages of easy standard French, such as is to be found in the more popular French Readers, Malot's Sans Famille, Bruno's Tour de la France, the stories of Erckmann-Chatrian, etc.

(One unit.) Second year French should include: (1) Continued work in dictation. (2) Memorizing of short poems. (3) Further practice of turning English into idiomatic French. (4) More detailed study of grammar, such as is contained in Fraser and Squair, Part II. (5) Reading of some three hundred pages of standard French of gradually increasing difficulty, such as the stories and plays of About, Daudet, Labiche, Mérimée, Sand, Scribe, etc.

(One unit.) Third year French should comprise the reading of some five hundred pages of more difficult French, including some masterpieces of French drama. Moreover, the student should be able to reproduce and paraphrase into idiomatic French parts of the works read. Texts should be selected from the works of Balzac, Beaumarchais, Corneille, Hugo, Marivaux, Molière, Musset, Racine, Vigny, Voltaire, etc.

ANCIENT HISTORY.—(One unit.) To the fall of the Roman Empire. Texts—Botsford, West, Myers.

MEDIAEVAL AND MODERN.—(One unit.) Texts, Myers, Robinson.

ENGLISH HISTORY.—(One half or one unit.) Cheyney, Larned.

AMERICAN HISTORY.—(One half or one unit.) Channing, Fiske, McMaster.

CIVICS.—(One half unit.) Fiske, Hart.

FREE-HAND DRAWING.—(One half unit.) The candidate must possess the ability to sketch, both in outline and with shading, simple objects such as a house, a small piece of machinery, a simple landscape, a group of geometrical figures, or an architectural ornament.

Certificates covering the above work, together with at least twenty specimen drawings, will be accepted.

MECHANICAL DRAWING.—(One half unit.) The candidate must be able to make projections in plan and elevation of geometrical figures, and to prepare working drawings of simple architectural and mechanical subjects.

Certificates covering this work, together with at least twenty plates, illustrating the elements of Descriptive Geometry or of simple machine parts, will be accepted.

BIOLOGY.—Courses in Zoology, Botany, Physiology and Hygiene will also be accepted under this head provided they meet the requirements here given. Satisfactory outlines of courses are given in the syllabus published by the N. Y. State Educational Department.

a. (One unit.) A course in General Biology extending throughout a year which shows the fundamental relationship between the animal and plant kingdoms and shows man's place in nature. A part of this course may deal with human physiology. The course must be accompanied with laboratory work and the student must be prepared to submit a laboratory notebook properly certified if required to do so.

b. (One half to one unit.) Courses in General Zoology or General Botany of at least one half year in length. It is recommended that these be courses which deal with habits and ecological relationships as well as structure. Forms of animals or plants of local or of economic importance should be used as type forms as far as possible. Courses in Botany

dealing solely with the flowering plants or courses in Zoology dealing solely with birds or insects will not be accepted. Laboratory work will be required in all cases and the student must be prepared to submit a properly certified note-book.

c. (One half unit.) Physiology and Hygiene. This must be a one half year course, and it is recommended that laboratory work be done with the course.

GEOLOGY.—(One half unit.) The materials of the earth, the work of the atmosphere, ground-water, running water, snow and ice, the oceans and lakes, vulcanism and diastrophism; rock structures; the history of the geologic periods from the Archæozic to the present.

Laboratory. Two hours per week for half a year. The common rock-forming minerals; the classification of rocks; topographic maps and geologic folios illustrating the geologic processes and the distribution, nature, and structure of rocks of the different periods; the fossil plants and animals most typical of each period. Norton's Elements of Geology, or Brigham's Text-book of Geology.

PHYSIOGRAPHY.—(One half unit.) The origin and significance of the great relief features of the earth, and the topographic forms of the land; the earth as a planet; the atmosphere; the climate; weather predictions. Appropriate field and laboratory work must accompany the study of the text. Certified laboratory notebooks must be presented if required. Suitable text books are Salisbury's Briefer Course in Physiography, Gilbert and Brigham's or Dryer's Physical Geography.

CHEMISTRY.—(One unit.) The candidate's preparation in Chemistry should include: (a) The study of at least one standard text-book on General Chemistry, to the end that the pupil may obtain a comprehensive view of the more important facts of Elementary Chemistry. (b) Individual laboratory work, comprising at least forty exercises. The laboratory note-book, certified by the candidate's instructor, must be presented.

PHYSICS.—(One unit.) The amount and extent of the class work demanded for entrance in physics may be indicated by such texts as Millikan and Gale's First Course, Hoadley's Elements or Carhart & Chute's High School Physics. In laboratory the work should include at least thirty quantitative experiments supplementing the class work, performed by the student, and recorded in a carefully prepared note-book.

ADMISSION WITH CONDITIONS.

Students who have not fully completed the subjects specified for the course they wish to enter may be admitted to the freshman class conditionally, but not if the sum of their deficiencies exceeds a half year's work, nor if in the judgment of the Registration committee they are not fitted to do college work to advantage. They will be admitted to such college classes as they may be qualified to enter. Under certain fixed restrictions, credit may be obtained on entrance for work done in college subjects and such advanced credit may be offset against deficiencies in preparatory work until the latter can be removed.

SPECIAL STUDENTS.

Persons desiring to pursue studies in the College are, as a rule, required to be prepared to enter the freshman class as candidates for one of the degrees. Under exceptional circumstances, however, persons who are not candidates for a degree may be admitted as special students and allowed to pursue selected studies. Every such person will be required to satisfy the Faculty that he is prepared to do, with profit, the work which he selects. Each case will be decided on its own merits.

ENTRANCE EXAMINATIONS.

Examinations for admission are held on Monday and Tuesday of Commencement week, and on Monday and Tuesday preceding the opening of the First Term.

All examinations except those taken in Meadville are under direction of the College Entrance Examination Board, whose certificates are accepted in place of examinations in all subjects.

ADMISSION BY CERTIFICATE.

In place of examinations in studies required for admission to College, certificates will be accepted from approved high schools having a regular four years' course in case of students regularly graduating in such a course. Certificates will also be accepted in case of graduates of a three years' high school course provided they pass entrance examinations of not less than three units additional to their certificate.

Certificates will not be accepted in case of students who are not graduates of the school from which the certificates are presented. *Students entering by certificate are considered as on trial until the completion of the mid-year examination, and the right is reserved to require further preparatory work from students who are not able to make satisfactory progress in college classes.*

In all cases an examination in English is required adapted to test the student's power of correct and idiomatic expression. No one will be accepted in English whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs.

Principals of schools desiring to have their schools

placed on the approved list are invited to address the President of the College.

Diplomas from the Regents of the State of New York will be accepted. All other certificates must be made out on special blanks, which will be sent on application.

The applicant for admission should also bring with him all laboratory note-books, exercise books, and other evidence of work done, properly certified to by the teacher.

All candidates for admission must present satisfactory testimonials of good moral character; and certificates of regular dismission will be required from those who have been matriculated at other institutions.

Requirements for Graduation to the Degree of Bachelor of Arts.

FRESHMAN YEAR.

	First Term.	Second Term.
English I.	3	3
English Bible I.	1	1
Mathematics or Science	4	4

One course from each of two of the following departments:

Latin, Greek, French, German, History.

These two courses will count as part of the student's Group Electives as detailed on pp. 41, 42.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For Group I. he should choose Latin and Greek.

For Group II. he should choose Latin or Greek and German or French.

For Group III. he should choose French and German.

For Group IV., if he is to do his major work in History, he should choose History and Latin or Greek or French or German. If he is to do his major work in English, he may choose any two of the subjects.

Not less than fifteen and not more than seventeen hours are to be taken weekly.

SOPHOMORE YEAR.

	First Term.	Second Term.
*Mathematics or Science	4 or 3	4 or 3
History or Economics or Political Science	3	3

Group Electives [See pp. 41, 42] to make not less than fifteen and not more than seventeen hours weekly.

*Candidates for the degree of Bachelor of Arts are required to take fourteen hours of mathematics or science, or fourteen hours of mathematics and science, i. e., this entire number of hours may be elected from mathematics or from laboratory science, or part from mathematics and the remainder, enough to make fourteen hours, may be elected from laboratory science subjects.

JUNIOR YEAR.

	First Term.	Second Term.
Philosophy I., II.	3	3

This subject may be taken in the sophomore year if the student is to do his major work in philosophy.

Group Electives and Free Electives to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis the first term and an oration the second term. See page 84.

Group Electives and Free Electives chosen from the list on pages 85-88 to make a total for the course of not less than one hundred twenty term hours.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of Groups I., II., III., IV., in which his work is to be done.

The head of the department in which the major work is done becomes the student's adviser. See page 95.

Group I.

1. In one department, Greek or Latin.....20 hrs.
2. In a second department, Latin or Greek.....14 hrs.
3. In a third department, English, History, Philosophy, French, or German .....14 hrs.
4. In a fourth department, English, History, Philosophy, French, or German ..... 6 hrs.

Group II.

1. In one department, Latin or Greek.....20 hrs.
2. In a second department, French or German.....14 hrs.
3. In a third department, English, History, Philosophy, Latin, Greek, French, or German.....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin, Greek, French, or German..... 6 hrs.

Group III.

1. In one department, French or German.....20 hrs.
2. In a second department, German or French.....14 hrs.
3. In a third department, English, History, Philosophy, Latin, or Greek .....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin or Greek ..... 6 hrs.

Students who present for admission less than two units in a modern language must, if this Group is chosen, take not less than eight hours additional to the above requirements, in the language chosen for the major subject.

Group IV.

1. In one department, English, History, or Philosophy 20 hrs.
2. In a second department, English, History, or Philosophy .....14 hrs.
3. In a third department, Latin, Greek, French, or German .....14 hrs.
4. In a fourth department, Latin, Greek, French, or German ..... 6 hrs.

Requirements for Graduation to the Degree of Bachelor of Science.

FRESHMAN YEAR.

	First Term.	Second Term.
English I.	3	3
English Bible I.	1	1
Foreign Language: French, German, Latin, or Greek	4	4
Mathematics I.	4	4
Science—Biology, Chemistry, Physics, or Surveying	4	4

This course will count as part of the student's Group Electives as detailed on p. 45.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For Group V., he should choose Biology.

For Group VI., he should choose Chemistry.

For Group VII., he should choose Physics.

For Group VIII., he should choose Mathematics or Surveying.

SOPHOMORE YEAR.

	First Term.	Second Term.
*History or Economics or Political Science	3	3
Foreign Language, continuing the language taken in the freshman year	4 or 3	4 or 3

Group Electives [See page 45] to make not less than fifteen and not more than seventeen hours weekly.

JUNIOR YEAR.

	First Term.	Second Term.
Philosophy I., II.	3	3

Group Electives and Free Electives to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis the first term and an oration or a thesis the second term. See page 84.

Group Electives and Free Electives chosen from the list on pages 85-88 to make a total for the course of not less than one hundred twenty term hours.

*This work may be postponed to the junior year in case it is necessary for the student to continue a subject begun the freshman year.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of Groups V., VI., VII., or VIII., in which his work is to be done.

The head of the department in which the major work is done becomes the student's adviser. See page 95.

Group V.

1. Biology .....20 hrs.
2. Chemistry .....14 hrs.
3. Physics ..... 8 hrs.

Group VI.

1. Chemistry .....20 hrs.
2. Biology or Physics .....14 hrs.
3. Biology or Mathematics or Physics..... 8 hrs.

Group VII.

1. Physics .....20 hrs.
2. Chemistry .....14 hrs.
3. Mathematics ..... 8 hrs.

Group VIII.

1. Mathematics or Surveying .....20 hrs.
2. Physics or Mathematics .....14 hrs.
3. Biology or Chemistry ..... 8 hrs.

COURSES OF INSTRUCTION

BY DEPARTMENTS.

In this detailed description of the courses of instruction the number of "hours" refers to the number of hour recitations weekly. Each term is eighteen weeks in length.

All courses are offered yearly, except as specially noted.

Any elective course may be withdrawn if not chosen by at least four students.

Two hours of laboratory work are counted as equivalent to one recitation hour.

ASTRONOMY.

The courses in Astronomy have two objects in view. Courses I. and IV. are general descriptive courses, designed to give the student a comprehensive view of the science and to acquaint him with the history of the growth of the universe, and the laws which govern its members. The students are given an opportunity to study the members of the solar system, the moon, star clusters, and nebulae, with the nine-inch equatorial in the Newton Observatory. Course II. is practical, and it is intended primarily for engineering students.

COURSE I.—Elements of Descriptive Astronomy. A study of the earth and its relation to the other members of the solar system; the laws which govern the phenomena of the solar system; and a general descriptive outline of the heavenly bodies.

First term, three hours.

COURSE II.—Field Astronomy. Determination of time, latitude, and longitude, by the transit, sextant and chronome-

ter. Open to those who have completed Trigonometry, Astronomy I., and the first term of Physics I.

Second term, two hours.

COURSE III.—Advanced Descriptive Astronomy. A more detailed and advanced study of the topics presented under Course I. Open to students who have completed Trigonometry, Physics I. and Astronomy I.

Second term, three hours.

COURSE IV.—History of Astronomy. A course tracing the progress of the science from early times, including the work of the celebrated pioneers, down to the present day. Open to students who have completed Course I.

Second term, two hours.

COURSE V.—Spherical and Practical Astronomy. For advanced students. The theory of observation and instruments. The theory and practice of determination of time, latitude, and longitude. Eclipses and occultations. Double star observations. Positions of planets and comets with the nine-inch equatorial. Open to students who have completed Mathematics II., Physics I., and Astronomy I., and may be begun either the first or second term.

Throughout the year, three to five hours.

BIOLOGY.

In the presentation of the courses of this department, the broadest aspects of the living world are kept continuously in mind. The fundamental course on which all of the others are based (Course I.) presents a view of the whole field of living things and their relationships, together with the main underlying laws which govern this kingdom. The remaining courses are intended to serve the purposes of students fitting for special lines of work, but an effort is made in all of them to so direct and train the powers of observation in the student that any or all of them have a true cultural value.

GENERAL BIOLOGY.

COURSE I.—Elementary Biology. After a discussion of the field to be covered, the work of the first term is largely zoological in character. During the second term, the course deals with the plant kingdom, ending with a discussion of the laws which have governed the development of the two kingdoms. The laboratory work consists of the study of a series of typical animals and plants together with introductory work in various divisions of the biological sciences such as morphology, physiology, embryology and ecology. Lectures and recitations, two or three hours a week; laboratory work, three hours a week.

Throughout the year, four hours.

COURSE II.—Historical and Theoretical Biology. This course takes up the development of the main biological laws and theories from a historical standpoint. Open to students who have taken Course I. and who are taking advanced courses in the department. Required of all students who take more than two courses in the department.

Throughout the year, one hour.

ZOOLOGY.

COURSE III.—Invertebrate Zoology. The external and internal morphology of a series of typical invertebrate animals which are dissected in the laboratory. Open to those students who have had Course I. or a satisfactory course in high school zoology. See Course VII. Lectures, two hours a week; laboratory work, four hours a week.

Second term, four hours.

COURSE IV.—Comparative Anatomy of Vertebrates. The dogfish, salamander, turtle and cat are dissected and studied in this course. Recommended for all students who are planning to study medicine or who expect to teach physiology. Open to all who have taken Course I. Lectures, one hour a week; laboratory work, four hours a week.

Throughout the year, three hours.

COURSE V.—Vertebrate Histology. Training in the preparation of tissues for examination with the microscope, and the

study of general histology. Elective for all who have taken Course III. or IV. Laboratory work with occasional lectures, eight hours a week.

First term, four hours.

COURSE VI.—Vertebrate Embryology. A study of the development of the chick. Many of the slides studied are furnished, but the student is required to prepare whole mounts and serial sections. Laboratory work with occasional lectures, eight hours a week. Elective for all who have had Course V.

Second term, four hours.

BOTANY.

COURSE VII.—Plant Anatomy and Physiology. The structure and functions of plant tissues and organs. This course forms a year's work with Course III. and is open to students who have had Course I. or a satisfactory course in high school Botany. Lectures, two hours a week; laboratory work, four hours a week.

First term, four hours.

COURSE VIII.—Cryptogamic and Phanerogamic Botany. The study of a series of typical plants. Open to students who have had Course I. Lectures, one hour a week; laboratory work, four hours a week.

Throughout the year, three hours.

COURSE IX.—Elementary Bacteriology. A course which deals with this interesting and important group of plants in their general biological relationships with training in elementary bacteriological technique. Open to students who have had Course I. and Chemistry I. or its equivalent. Lectures, one hour a week; laboratory work, four hours a week.

First term, three hours.

COURSE X.—Bacteriological Water and Milk Analysis. This course should be taken in connection with Chemistry VII. Open to students who have had Course IX. Laboratory work with occasional lectures, six hours a week.

Second term, three hours.

CHEMISTRY.

The courses offered by this department are intended to have both a cultural and a technical value. The work has been organized as the result of an endeavor to acquaint the student with the general and special principles of the work, to familiarize the worker with accurate methods of experimentation, to develop the ability to observe critically and accurately, and make correct inferences, and finally, to provide suitable preliminary training for independent research work.

COURSE I.—General Inorganic Chemistry. This course concerns itself with the fundamental principles on which the science is based. The non-metals, metalloids and metals, together with their more important compounds, are studied. Energy as a factor in chemical reactions receives special attention, as also do the elementary principles of chemical dynamics and statics. Stress is laid upon certain processes and various materials in their application to the commercial arts. Each student has a desk in the laboratory at which the required experiments are performed. More elaborate experiments to illustrate lectures are performed by the instructor. Text-books: Lee's Text-Book of Experimental Chemistry and Mellor's Modern Inorganic Chemistry. Lectures and recitations two or three hours a week. Laboratory work two to four hours a week.

Throughout the year, four hours.

COURSE II.—Analytical Chemistry.—Qualitative Analysis. —Bases and Acids. The student is required to work through a system of preliminary analytic reactions. The more intimate knowledge of the elements and their compounds thus gained enables the student to verify the methods of grouping and separating the elements. At stated intervals, lectures and recitations will be devoted to discussions of all reactions. The modern theories of "solution," "precipitation," "chemical equilibrium," etc., receive much attention. Students are required at the conclusion of the work to analyze a given number of unknown substances without reference to the

manual. This course includes a brief course in Spectrum Analysis. Laboratory and lectures six hours a week throughout the year. Open to those who have completed Course I., or its equivalent.

Throughout the year, three hours.

COURSE III.—Analytical Chemistry.—Quantitative Analysis. The aim of this course is to provide a thorough knowledge of the principles of gravimetric and volumetric analysis as applied to the separation and determination of the common bases and acids found in salts, minerals, ores, etc. It is of special value as a training in the more refined methods of manipulation. Each student is required to calibrate a set of weights and all volumetric apparatus. The ability to make a quantitative analysis of an unknown substance is the final requirement.

Electro-Chemical Analysis.—A brief course in electrolytic methods of analysis is included in this course.

Laboratory work, eight hours per week. All laboratory work is supplemented by lectures. Open to those who have completed Course II., or its equivalent.

Throughout the year, four hours.

COURSE IV.—Gas Analysis. This course is offered because of the analyst's frequent need of this kind of training. It deals with the density of gases, with the volumetric and barometric methods of determining the composition of various gases, and with many modern practical applications of gasometric apparatus. Lectures and laboratory work eight hours a week for one term.

First or second term, four hours.

COURSE V.—Organic Chemistry. The work of this course begins with an historical sketch of the development of organic chemistry, and a consideration of such topics as, the nature of carbon, homology, isomerism, stero-isomerism, types of formulae, nomenclature, and classification of organic compounds. The compounds of the *aliphatic* and *aromatic* series are then studied in detail. Those compounds and processes which are of technical or theoretical importance receive

special attention. This course is recommended to those students who contemplate the study of medicine or other phases of chemico-biological work, or chemical engineering. Course VI. should be taken in conjunction with this course. Open to students who have completed Course II.

Throughout the year, three hours.

COURSE VI.—Organic Preparations, Reactions, and Analysis. This is a laboratory course involving methods for the preparation and purification, and the analysis of a number of typical organic compounds. The physical and reaction properties, and relationships of these compounds are then studied in detail. In the prosecution of this work the student becomes familiar with the apparatus and operations involved in the work of practical organic chemistry, such as crystallization, determination of melting and boiling points, fractional distillation, steam distillation, extraction, drying, determinations of molecular weights; and with the general methods of preparation, such as etherifications, oxidation and reduction, saponification, nitration, sulphonation, diazotization, etc. The work in organic analysis includes in additon to the usual qualitative tests, quantitative determinations of carbon, hydrogen, nitrogen and the halogens. Laboratory work, six hours per week. Open to those who have completed or are taking Course V.

Throughout the year, three hours.

COURSE VII.—Sanitary Analysis. This course deals with the chemical methods used in the analysis of milk, the sanitary analysis of water, and the examination of sewage. The analysis of air and fuel gases is included in this course. Six hours laboratory work per week. Open to those who have completed Course III.

Throughout the year, three hours.

COURSE VIII.—Advanced Analytical Chemistry. Technical Analysis. This course offers opportunity for advanced students to study methods of analysis along special lines. It is designed to familiarize the individual with many of the analytical methods in use in commercial laboratories. Three lines of work are open to the student: (a) the analysis of

those substances which are inorganic in their nature, such as iron and steel, alloys, silicates and sulphides, ores, cements, coke and coal, and water; (b) the analysis of those substances essentially organic in nature, as foods, and the detection of adulterants; (c) Agricultural Chemistry, which includes analysis of soils, fertilizers, dairy products, etc.

Special courses in Biological Chemistry and Toxicological Analysis are offered to students preparing for the profession of chemistry or the study of medicine.

Throughout the year. Hours elective.

COURSE IX.—Physical Chemistry. This course aims to give the student a general knowledge of the principles of the subject by means of lectures, reading and laboratory work. This latter work will include the determination of "the heat of neutralization," "heat of solution," "speed of reaction," solubilities, molecular weights, conductives, refractive indices, and an experimental study of various other physical and chemical constants. Six hours per week.

Throughout the year, three hours.

COURSE X.—History and Development of Chemical Theory. This course endeavors to trace the development of chemistry from its earliest origins to the present time, by a study of the lives and influence of the men who have contributed to this phase of science. Lectures, collateral readings, and preparation of theses. Open to students who have completed Course I.

Throughout the year, two hours.

COURSE XI.—Industrial Chemistry. The work of this course has been outlined to meet the wants of those students pursuing engineering courses.

Throughout the year, four hours.

ECONOMICS.

Particular attention is given to the study of the development of economic life and institutions, American conditions being specifically analyzed. Students

are made familiar with the accepted principles of the science and are given a practical acquaintance with the complex modern economic organization. Encouragement is also offered to individual research, leading to possible future specialization. Lectures, papers, and comparative examination of various authorities constitute the method of instruction.

COURSE I.—Principles of Economics. Introducing survey of industrial history, production and distribution, compassing the accepted elements of the science. The text used is Seager's Economics, and required readings are assigned in Marshall's Principles of Economics and in the Austrian authorities.

First term, three hours.

COURSE II.—Applied Economics. This is a continuation of Course I. and is a detailed examination of the economic principles applied in trusts, labor, tariff, taxation and finance. Social economics as presented in Wright's Practical Sociology is included. Lectures, conferences, papers, and individual investigations are the methods of instruction.

Second term, three hours.

COURSE III.—Economic Theories. History of the development of economic thought, including a study of the leading principles of the science as propounded in Adam Smith, Ricardo, Mill, Senior, Menger, Wieser, Böhm-Bawerk, Walker, and Clark. The seminar method is used. Open to a limited number of those who have completed Courses I. and II.

First term, two hours.

COURSE IV.—Transportation. A course of lectures on the American Railway—a study of railway economics and the problems of government regulation. An extensive use is made of the Inter-State Commerce Commission findings and national industrial data. Open to advanced students.

Second term, two hours.

EDUCATION.

Through the generosity of Mr. Truman D. Collins, provision has been made for the endowment of a Chair of Philosophy and Education. The funds are not immediately available, but arrangements have been made whereby a sufficient amount of work will be offered in Education to satisfy the requirements of the new educational code of Pennsylvania.

ENGLISH BIBLE.

The work in this department is intended to open to the student the rich stores of literature contained in the Bible; to familiarize him with the history of the Hebrew people, their civilization, and their influence on the world; and to lead to the critical study of the spirit and form of Hebrew literature as it is shown in the English version. The English Bible is studied as a great monument of our literature and as the source of our knowledge of one of the great civilizations of the world. The courses do not touch questions of doctrine or belief.

COURSE I.—A General Introduction to the English Bible. A brief sketch of the history of the Hebrew and Greek Bibles is offered and the evolution of the English Bible traced in detail and illustrated by rare original copies of the early translations. The course includes the history of the Hebrew people as told by their own chroniclers. A general survey of the different types of literature to be found in the Old and New Testaments will be given, especial attention being directed to the picturesque biography and to the historical crises which vitally affected the development of the nation. In connection with this the geography of the Holy Land and the chonology of the historic and prophetic eras will be studied. The student will be constantly reminded of the influence of Bible thought and phrase upon modern literature.

Moulton's Modern Reader's Bible will be used as text-book, but much of this course will be given in lectures which each student is required to keep in carefully written note-books which at intervals will be examined by the instructor in English.

Throughout the year, one hour.

COURSE II.—New Testament History and Literature. Stress is here laid on the importance of understanding the political and religious background of the life and thought embodied in the New Testament. To this end the Maccabean and Roman periods of Jewish history are carefully studied. The new light thrown upon the "Land and the Book" from recent explorations will be examined, and the social and industrial condition of the world in the times of Jesus and St. Paul noted. The relation of the Christian religion to the Old Testament religion and to the Greek and Persian mysteries will be traced. The Gospels and the Acts will be studied both from the historical and literary standpoints and the development of church life and thought will be carefully examined. The Epistolary and Apocalyptic literature will be studied in the order of its development and with constant reference to the new discoveries of contemporaneous documents. Open to those who have taken Course I.

Throughout the year, two hours.

Given in 1913-14.

COURSE III.—Old Testament History and Literature. The method here pursued is similar to that in the preceding course. The history of Palestine from the earliest times down to 165 B. C. is studied in connection with the life and development of the Hebrew people. The international connections with Egypt, Phoenicia, Syria, Assyria and Babylon are briefly traced and the political, social and religious influence noted. The marked eras of the nation's growth are sharply defined from the Conquest to the Exile and the later origin of Judaism explained. The Old Testament literature is taken up in the order of its historic development and its relation to the life, thought and external history of the Israelites is brought out. The principles governing the proper interpretation of all Oriental writings are defined and applied to the early Bible

narratives. The relations of the Bible to science are here examined. The literature of the Old Testament, taken up chronologically, is compared with contemporaneous writings. The latest results of Archaeology are made available. Particular attention is given to the origin, growth and character of the legal and wisdom literature and to the theology of the Prophets. A few of the greatest masterpieces, such as Job, Ecclesiastes, etc., are studied in detail.

Throughout the year, three hours.

Given in 1914-15.

ENGLISH LANGUAGE AND LITERATURE.

The aim of this department is to fit the student to use the English language as an instrument for the easy, idiomatic, and energetic expression of his thought; to train him, both by theory and by practice, for natural and effective public address; to acquaint him with the essential facts in the development of the English language and literature, and with the great authors who have created that literature; and to render him sensitive to the literary and aesthetic values of life. Rigorous and painstaking habits of scholarship are constantly inculcated; but the student is never allowed to forget that literature is vital—that it draws its subject-matter and its inspiration from life, and in turn transmutes the crude and imperfect forms of life into beauty and character.

COURSE I.—Lectures on the Elements of Rhetoric; Compositions; and Selected Readings in English Literature. This course aims to acquaint the student with the principles and the practice of the art of rhetoric, and to stimulate in him a desire for good literature. It is believed that successful instruction in rhetoric depends more upon example and practice than upon precept. With this in mind, examples of the best English literature are kept continually before the student. He is encouraged to write freely upon subjects that

are familiar to him, and that spring naturally from the interests and the activities of his daily life. The instructors correct each paper in detail, and make appointments with each student for private consultation or for practice work in small groups. The instruction is made extremely flexible, and freshness and variety of method are constantly sought.

Throughout the year, three hours.

COURSE II.—Introduction to English Literature. 1. An outline history of the development of English literature. 2. Collateral reading. 3. The study and interpretation in class of Shakespere's Macbeth, Milton's Minor Poems, and Selections from Pope.

Elective for all students who have completed Course I., and required of all who desire to do advanced work in English.

Throughout the year, two hours.

COURSE III.—English Poetry from 1789 to 1832. Copious readings from the poetry of Burns, Wordsworth, Scott, Byron, Shelley, and Keats. The constant aim is to arouse in the mind of the student an intelligent enthusiasm for the great poetry of the period; and, while holding him to accurate and diligent scholarship, to show him how life and literature interpenetrate.

Elective for all students who have completed Course II.

Throughout the year, three hours.

Given in 1913-14.

COURSE IV.—The Victorian Period of English Literature. Landor, Carlyle, Tennyson, Arnold, Ruskin, and Browning. Conducted in the same manner as is Course III., with which it alternates.

Elective for all students who have completed Course II.

Throughout the year, three hours.

Given in 1914-15.

COURSE V.—American Literature. Outlines of its development. Lectures upon representative authors. The critical study and interpretation of masterpieces. Appreciations and essays by members of the class.

Elective for all students who have completed Course III.

or Course IV., and to a limited number who have completed Course II.

First term, two hours.

Given in 1914-15.

COURSE VI.—Elements of Literary Criticism. Winchester's Principles of Literary Criticism. A systematic inquiry into the essential elements of literature, and a detailed consideration of the various forms of literature. A considerable amount of illustrative reading is expected, and the student is required to test two or three classic productions by a practical application of the principles of criticism.

Elective under the same conditions as Course V.

Second term, two hours.

Given in 1914-15.

COURSE VII.—Shakspere. Analytic and interpretative studies of five plays of Shakspere: As You Like It, Othello, King Lear, Antony and Cleopatra, The Tempest. A careful reading of Dowden's Shakspere Primer is required in connection with this course.

Elective under the same conditions as Course V.

First term, two hours.

Given in 1913-14.

COURSE VIII.—Prose Fiction. Bliss Perry's A Study of Prose Fiction. The novel, the romance, and the short story. Studies in the structure and the significance of these popular forms of modern English fiction. Illustrative readings and carefully prepared papers.

Elective under the same conditions as Course V., except that the class must be kept within small limits, and that advanced students who have shown special talent as writers will be given preference.

Second term, two hours.

Given in 1913-14.

COURSE IX.—Anglo-Saxon. Old English Grammar. Reading of prose and a few poetical selections from Bright's Anglo-Saxon Reader.

Elective for all students who have completed Course II.

First term, three hours.

COURSE X.—Chaucer. Middle English forms and syntax. The Canterbury Tales and minor poems.

Elective for all students who have completed Course II.

Second term, three hours.

Given in 1913-14.

COURSE XI.—Old and Middle English Poetry, not including Chaucer. The most important selections will be read, in translation when necessary. The literary history of the period will also be studied.

Elective for all students who have completed Course II.

Second term, three hours.

Given in 1914-15.

FRENCH LANGUAGE AND LITERATURE.

It is the aim of the courses in this subject to give to the student: (1) an accurate knowledge of the language of the present time both as written and spoken; (2) an appreciation of the more important masterpieces of the literature proportionate to the knowledge of the language; and (3) a knowledge of the historical development of the literature.

The work as above outlined is carried on by means of recitations, the writing of prose and essays, the hearing of lectures in French, and by collateral readings. Much stress is laid from the beginning upon the ability of the student to express himself directly in the language. With this end in view the work of the class room is conducted in French and phonetic methods are employed in order to give accuracy of pronunciation.

COURSE I.—Elementary French. Fraser and Squair's Grammar is used as a reference book. Oral and written exercises. Dictation. Reading of such easy prose as Guerber's Contes; Halévy, L'Abbé Constantin; De La Brète, Mon Oncle et Mon Curé.

Throughout the year, four hours.

COURSE II.—Intermediate French. Reading of such authors as George Sand, Mérimée, Daudet, Augier, Dumas, etc. Memorizing of selected poems. In this course brief outlines of the history of literature are also given with collateral readings from celebrated authors.

Throughout the year, four hours.

COURSE III.—French Literature in the Seventeenth Century. A study of the drama and of the miscellaneous literature of the period. Corneille, Racine, Molière, La Fontaine, La Bruyère, Pascal, Bossuet, Fénelon, Mme. de Sévigné, Mme. de La Fayette.

Throughout the year, three hours.

Given in 1913-14.

COURSE IV.—French Literature in the Eighteenth Century. This course will treat of the time and influence of Voltaire, Montesquieu, Rousseau, the Encyclopedists, Beaumarchais, Lesage, Marivaux, André Chénier.

Throughout the year, three hours.

Given in 1914-15.

COURSE V.—French Literature in the Nineteenth Century. A study of the principal authors of this period. Chateaubriand, Lamartine, Victor Hugo, Alfred de Vigny, Alfred de Musset, Théophile Gautier, Leconte de Lisle, Sainte-Beuve, Balzac, with a brief survey of contemporary writers.

Throughout the year, three hours.

Given in 1913-14.

COURSE VI.—French Literature before the Seventeenth Century. A study of the history of old French literature, which will include reading of extracts from the Chanson de Roland, etc. The writers of the latter part of this period will also be studied.

Throughout the year, three hours.

Given in 1914-15.

COURSE VII.—French Prose Composition.

Throughout the year, one hour.

GEOLOGY.

The courses in Geology are eminently general culture courses, explaining as they do so many common phenomena and leading the student to take a greater interest in natural objects. The class work is supplemented by practical work in the field, museum, and laboratory.

COURSE I.—Physiography of the Land and Elementary Meteorology. Laboratory work in the study of topographic and weather maps will be supplemented by several short excursions. Recitations three hours a week and laboratory two hours.

Second term, four hours.

COURSE II.—General Geology. This course is planned to give a comprehensive view of the elements of geology, and it includes physiographic, structural, dynamic, historical, and economic geology. The historical part deals largely with North America. The economic part treats of coal, oil, gas, building stones, clay, cements, abrasives, underground waters, precious stones, and the ores of iron, copper, lead, zinc, gold, and silver. In the laboratory a study is made of the common rock-forming and important ore-forming minerals, the classification and identification of rocks, topographic and geologic maps and folios, and fossils typical of the various geologic periods.

Open to those who have completed the freshman year. Recitations, three hours a week; laboratory or field work, two hours a week.

Throughout the year, four hours.

COURSE III.—Mineralogy. Crystallography, blowpipe analysis, and determinative mineralogy. A minor part of the work in the laboratory deals with crystal forms and crystal models, and a major part with the study of about one hundred and fifty minerals by means of the blowpipe and by simple chemical and easily applied physical tests.

Open to those who have had a year in chemistry. Recitation, one hour a week; laboratory work, four hours a week.

First term, three hours.

GERMAN LANGUAGE AND LITERATURE.

The methods employed in the first two years of this study are intended to establish a broad and thorough foundation for an appreciative study of German literature in the advanced courses. Accurate and intelligent pronunciation is insisted upon; and the principles of phonetics are represented in simple form and are put to practical use in the reading exercises in the class room. In prose composition more attention is given to reproductive exercises and theme-writing than to translations. The oral use of the German language in the class room will be constantly increased until the recitations are conducted entirely in German.

A German Conversation Club, in which a special opportunity for linguistic practice is afforded, has been founded among the students of the college. Membership is open to those who have taken Course II or its equivalent.

COURSE I.—Elementary German. Walter & Krause's Beginning German. Such reading as the following: Storm's Immensee, Baumbach's Im Zwielicht, Heyse's L'Arrabbiata, Goebel's Hermann der Cherusker, Wildenbruch's Neid, Schiller's Wilhelm Tell. Oral exercises based on the Gouin Series and oral and written reproduction of portions of the text read. The aim of this course is to enable the student to read and understand accurately German prose of ordinary difficulty and to acquire some proficiency in writing and speaking German.

This course represents from five to six terms of ordinary high school work, but may not be taken to remove language requirements for admission to college.

Throughout the year, four hours.

COURSE II.—Intermediate German. Reading of modern prose, modern comedy, and classical drama. One hour a week throughout the year will be devoted to prose composition, re-

production of texts in German, and short themes in German.

Open to all students who have credit for Course I., or who present two years of German for admission to college.

Throughout the year, four hours.

COURSE III.—Introduction to Eighteenth Century Classics. Lessing, Goethe and Schiller. Two dramas of each are read in the order named and at least one work of each is critically analyzed. Monthly themes in German and a semestral essay in English. Collateral reading: Robertson's History of German Literature,—chapters on the above poets. Alternates with Course IV.

Throughout the year, three hours.

Given in 1914-15.

COURSE IV.—German Novel and Short Story. Rapid reading of one or more works of H. von Kleist, Eichendorf, Hauff, Hoffman, Stifter, Ludwig, Freytag, C. F. Meyer, Keller, Storm, Heyse, Fontane, Wildenbruch, Sudermann, and Rosseger. A part of this reading is done outside the class and is made part of written themes in German. Collateral reading: Robertson's History of German Literature, chapters on the authors read in class. Alternates with Course III.

Throughout the year, three hours.

Given in 1913-14.

COURSE V.—German Conversation and Composition. The aim of this course is to train the student in colloquial German in speech and writing. Selections from modern authors are read to the class and reproduced from memory, and themes are written weekly on assigned subjects. The conversation is based on Kron's Daily Life and Vos' Materials for German Conversation. Given in conjunction with Course III. This course, conducted in German, is especially intended for those who look forward to teaching of German.

Throughout the year, one hour.

COURSE VI.—Goethe's Life and Work. First Term. Reading of works illustrating different periods of Goethe's literary development, such as Götz von Berlichingen, Egmont, Torquato Tasso, and selections from Dichtung und Wahrheit. Collateral reading from Bielschowsky's Goethe.

Second Term. Goethe's Faust. Interpretation of the drama and discussion of its philosophic and ethical ideas.

In this course a considerable amount of collateral reading will be required. Alternates with Course VII.

Throughout the year, two hours.

Given in 1914-15.

COURSE VII.—Nineteenth Century Drama. Kleist, Grillparzer, Hebbel, Ludwig, Gutzkow, Wagner, Hauptmann, Sudermann. Rapid reading of representative play of each. Short themes in German on the reading matter. Collateral reading: Robertson's History of German Literature; chapters on the authors read in class. Alternates with Course VI.

Throughout the year, two hours.

Given in 1913-14.

COURSE VIII.—German Literature. A systematic study of German literature from the earliest times, with special emphasis on the Classic Periods of the Twelfth and Eighteenth Centuries. Lectures in German, reports and readings. Collateral reading: Thomas' Anthology of German Literature, Wenckebach's Meisterwerke Des Mittelalters, Woerner's Niebelungenlied, Schiller's Braut von Messina and Don Carlos, and Goethe's Faust. Alternates with Courses IX. and X.

Throughout the year, two hours.

Given in 1913-14.

COURSE IX.—History of the German Language. A general survey of the historical development of the German language, with discussions of such linguistic problems as bear relation to current usage. Text-book: Behagel's Die Deutsche Sprache. Recitations and lectures. This course is especially intended for those preparing to teach German.

First term, two hours.

Given in 1914-15.

COURSE X.—Middle High German. Study of the dialect in its relation to modern High German, and readings from Hartmann von Aue's Der arme Heinrich, das Niebelungenlied, and Walter von der Vogelweide's lyrics.

Second term, two hours.

Given in 1914-15.

COURSE XI.—Scientific German. This course has been specially arranged for the student of science who is interested mainly in a reading knowledge of German. Open to students who have completed Course II.

Throughout the year, two hours.

GREEK LANGUAGE AND LITERATURE.

The aim of the department is to lead the students to the acquisition of a living knowledge of the Greek language as an introduction to a practical acquaintance with Greek life and thought. It is believed that by careful and accurate work in the first years of the language the student can gain such knowledge as will enable him to read widely and independently. The courses laid down are such as are thought to be best adapted to that end. The work is varied, and an attempt is made to give a view of all departments of the literature. The department possesses a growing collection of casts of antique sculpture, painted vases and other antiquities, about a thousand photographs, and several hundred lantern slides.

Students entering College without Greek are given opportunity to prepare to enter Greek I. with a minimum loss of time.

GREEK A.—Elementary Greek. This is a course intended to prepare students to enter Greek I. after a year of careful work. The first term is devoted to some such book as Benner and Smyth's First Greek Book, the second term to selections from Xenophon and other Attic authors. Students of some maturity and reasonably well grounded in Latin will be prepared in one year to do the work in Greek I. with profit.

Throughout the year, five hours.

COURSE I.—Homer, The Iliad or the Odyssey. Detailed study of two or three books and rapid reading of as much more as the time allows. This rapid reading of the Homeric

poems as literature is made the basis of the study of early Greek life and civilization.

Greek Composition.—Passages from classic authors are carefully read in class. A weekly exercise in composition is based on the Greek text read. The aim is to develop a vocabulary and an accurate knowledge of Greek syntax. Impromptu writing of Greek is emphasized.

Throughout the year, four hours.

COURSE II.—Lysias. Selected orations. A detailed study is made of the history of Athens in the age of Pericles and of the Peloponnesian War as an introduction to this part of the work.

Plato.—The Apology and Crito and selections from the Phaedo. Outline of Greek philosophy.

This course is made the basis of the study of historical Greek life and civilization.

Throughout the year, three hours.

COURSE III. A—Greek Drama. Detailed study of two plays and rapid reading of several others. Usually the following will be read: Aeschylus' Agamemnon, Sophocles' Oedipus Tyrannus, Euripides' Iphigeneia in Tauris and Aristophanes' The Frogs. Individual investigation of special topics. The course is made not only a study of the origin and development of the Greek Drama, but also a study in literary evolution.

Throughout the year, three hours.

GREEK III. B.—Greek Oratory. Andocides, Isocrates, Demosthenes. The history and politics and the public and private antiquities of the times. Lectures and assigned readings.

Throughout the year, three hours.

One of these courses is given each year. Open to all who have completed Course II.

COURSE IV. A.—Classical Archaeology. Egyptian, Babylonian, and Assyrian Art. Mycenaean Civilization. Greek Vase Painting. Greek Architecture.

Throughout the year, two hours.

Given in 1914-15.

COURSE IV. B.—Classical Archaeology. Greek Sculpture.

Throughout the year, two hours.

Given in 1913-14.

Courses IV. A. and IV. B. are given in alternate years. The instruction is mainly by lectures, but text-books are used and a large amount of collateral reading is required. The courses are open to those who have completed Course I., and under some limitation may be elected by students having no knowledge of Greek.

COURSE V.—Greek Testament. A minute and critical study of a portion of the New Testament to insure a familiar and accurate knowledge of vocabulary, syntax, and idioms, followed by more rapid reading to develop ease and rapidity in grasping the thought of the original. The purpose of the course is to lay the foundation for exegetical work. Open to all who have completed Course II.

Throughout the year, two hours.

Given in 1914-15.

COURSE VI.—Greek Literature. A careful survey of the field from Homer to the Roman period. One hour a week is devoted to lectures and text-book work, one hour is given to critical readings in English translations, and two hours to readings in Greek. Open to all who have completed Course II.

Throughout the year, four hours.

Given in 1913-14.

COURSE VII.—Greek Literature in English. The course consists of the lectures, text-book work, and English readings of Course VI. It may be elected by students having no knowledge of Greek.

Throughout the year, two hours.

Given in 1913-14.

HEBREW.

COURSE I.—Davidson's Hebrew Grammar, completed. Twelve or more chapters in Genesis read.

Throughout the year, four hours.

This course is given in alternate years if called for.

HISTORY.

The aim of the department is to give that knowledge of the facts and philosophy of history which belongs to a liberal education. The subjects in periods and countries are planned also to train for university work or to equip for preparation to enter law or journalism. The evolution of European civilization from its sources and the growth and influence of Anglo-Saxon institutions are the general theme of the work. History is presented as a real educative process. The department has the appropriate library authorities for the several courses, and source materials are freely used. Abstracts, maps, essays, and outlines are required in the class room. The method of instruction is a combination of lectures and textbook. Course I. is required for admission to the succeeding courses.

COURSE I.—European History. The period covered extends from the Teutonic migration to the French Revolution. The first term is occupied with mediaeval institutions and the transition to modern Europe. Robinson's European Readings and Bemont and Monod's Mediaeval Europe are the texts for class guidance. Required readings in standard authorities are assigned. The second term is devoted to the growth of nationalities and the religious and political struggles for balance of power. Lodge's Modern Europe furnishes the outline of the work.

Throughout the year, three hours.

COURSE II.—The Renaissance and the Reformation. The first term is devoted mainly to the Renaissance in Italy and subordinately in England. The political, intellectual, literary and aesthetic phases of the movement are studied. Burckhardt and Symonds are the authorities used, with Einstein for the English Renaissance. The second term is occupied with the Reformation from Wycliffe to the Peace of West-

phalia. The texts are Häusser and Fisher. This course alternates with Course III.

Throughout the year, three hours.

Given in 1913-14.

COURSE III.—French Revolution and Nineteenth Century. The first term follows the causes and the course of the French Revolution and concludes with the Napoleonic Era. A lecture course with references to many authorities, Stephen's Revolutionary Europe and Rose's Napoleon being required.

The second term examines Europe in the Nineteenth Century after the Congress of Vienna, studying the formation of the German and the Italian unity and the continental triumph of liberalism. Seignobos' Europe and Fyffe's Modern Europe are used as outlines of the work.

Throughout the year, three hours.

Given in 1914-15.

COURSE IV.—History of England. The work extends from the Teutonic origins to the Nineteenth Century. Lectures, collateral readings, and text-books. Gardiner's Student's History and Green's Short History of the English People furnish the outline; and references are required in the constitutional histories of Stubbs, Hallam, and Taswell-Langmead and in the works of Froude, Gardiner, and Lecky. This course alternates with Course V.

Throughout the year, two hours.

Given in 1914-15.

COURSE V.—The Political and Constitutional History of the United States, from 1781 to 1861. The sources are extensively used as found in the government publications, the writings and addresses of statesmen, and the contemporary interpretation of national affairs. Lectures, and reports by students on assigned readings in Schouler, Henry Adams, McMaster, Gordy, Rhodes and the American Nation Series. Monographs required of the class each term.

Throughout the year, two hours.

Given in 1913-14.

ITALIAN LANGUAGE AND LITERATURE.

COURSE I.—Elementary Italian. Italian Grammar, Grandgent. Oral and written exercises. Dictation. Texts such as De Amicis, Cuore; Goldoni, Il vero Amico; Manzoni, I Promessi Sposi.

Throughout the year, three hours.

Given in 1913-14.

COURSE II.—Literature in the Thirteenth and Fourteenth Centuries. Dante, La Divina Commedia; Petrarca, Rime Scelte.

Throughout the year, two hours.

Given in 1914-15.

LATIN LANGUAGE AND LITERATURE.

The courses in the Latin department are intended to direct the student to a systematic study of the language and its development, to acquaint him through a varied reading of the best authors with the leading features of the literature, and to make him familiar with the main facts of Roman history, life, and civilization. Technical grammar and composition are studied only in so far as they contribute to the comprehension of the language. The department is well equipped with books, maps, and facsimiles of inscriptions and has a good collection of photographs, lantern slides, and antiquities for illustrative purposes.

The instruction is given by means of recitations, supplemented by lectures and, in the advanced courses, by individual work.

COURSE I.—Erasmus, selected Colloquia.

Cicero, De Senectute or De Amicitia.

Livy, Books XXI.-XXII., or selections from Books I.-XXV.

Weekly exercises in Prose Composition.

This course includes a detailed review of Latin case struc-

ture and syntax, and a specific effort is made to teach right habits of reading and translation.

Throughout the year, four hours.

COURSE II.—Horace, selected Odes and Satires.

The more common metrical structures are studied so that the Latin can be read with ease. Especial attention is directed to Horace's life and philosophy and to as much of the history and customs of the period as sheds light on the subject matter.

Roman Comedy. Selections from the comedies of Terence or Plautus.

Throughout the year, three hours.

COURSE III. A.—Tacitus, Annals, selections from Books I.-VI.

Suetonius, Lives. Rapid outline of Roman history to the downfall of the Republic. Careful study of the upbuilding of the principate and the reigns of Augustus and Tiberius.

B.—Martial, selected Epigrams.

Quintilian, Institutions X. Lectures and discussions on Roman literary forms.

Throughout the year, three hours.

One of these courses alternates with Course IV. Open to all who have completed Course II.

Given in 1913-14.

COURSE IV.—Roman Private Life. Lectures and reports on Roman private life with readings mainly from the Letters of Pliny.

This course alternates with Course III. Open to all who have completed Course II.

Throughout the year, two hours.

Given in 1914-15.

COURSE V.—Roman Topography. Lectures and reports

on topography, architecture, monuments. and history of Rome.

May be elected without previous preparation in Latin.

Throughout the year, two hours.

Given in 1913-14.

COURSE VI.—Advanced Latin Composition. Practice in writing prose, with careful study of syntax and idiom. Individual work designed primarily for those who look forward to teaching or to graduate work. One hour class work and one private conference weekly.

Throughout the year, two hours.

Given in 1914-15.

NOTE.—For students entering college without complete preparation in Latin, instruction will be provided in such secondary Latin as may be required to satisfy entrance conditions.

MATHEMATICS.

The elementary courses in mathematics are: college algebra, plane and spherical trigonometry, analytic geometry including conic sections, and differential and integral calculus. These courses may be taken in the freshman and sophomore years. They mark the minimum attainments that a teacher of mathematics in a high school or an academy should possess.

COURSE I.—Algebra. This is a continuation of the Algebra required for entrance. Much attention is given to graphical representation of linear and quadratic equations, and the following topics are considered: mathematical induction and the binomial theorem for positive integral exponents, logarithms, undetermined coefficients, permutations and combinations, the theory of equations and an elementary treatment of determinants.

Trigonometry. The elements of trigonometry on the plane and on the sphere.

Throughout the year, four hours.

COURSE I. C.—Solid Geometry.

First term, three hours.

COURSE II.—Analytic Geometry and Calculus. An elementary treatment of the fundamentals of Analytic Geometry, of two and three dimensions, designed to equip the student for work in Calculus. This course includes a complete elementary course in Differential and Integral Calculus and while it satisfies the requirements in mathematics for B. S. students, it will be adapted to those who are fitting themselves to teach mathematics in secondary schools.

Throughout the year, four hours.

COURSE III.—Advanced Calculus. This course is a continuation of Course II. It should be taken by those who intend to pursue advanced work or are looking forward to work in applied mathematics.

First term, three hours.

COURSE IV.—Differential Equations. An elementary treatment of Differential Equations, with applications to Physics and Mechanics. This course is necessary to a well-rounded course in mathematics.

Second term, three hours.

COURSE V.—Projective Geometry. Lectures, supplemented by reading. Reference books: Reye, Geometrie der Lage; Scott, Modern Geometry; Cremona, Projective Geometry.

Higher Plane Curves. The general properties of curves, the resolution of singularities, and forms of curves of the third and fourth orders.

Throughout the year, three hours.

Given in 1913-14.

COURSE VI.—Functions of a Complex Variable. A general

introduction to the theory of functions of a complex variable, following the methods of Weierstrass and Riemann.

Throughout the year, two hours.

Given in 1914-15.

PHILOSOPHY.

The aim of this department is to acquaint the student with the chief philosophic theories of the past and present, to cultivate in him the habit of critical and independent thought, and to set forth a consistent and satisfactory method of dealing with the fundamental problems of speculation.

COURSE I.—Psychology. A general introduction to the subject. A text-book is used, which is supplemented by informal lectures, assigned readings, and papers on special topics.

First term, three hours.

COURSE II.—Ethics. A brief survey of the history of ethical thought is followed by an examination of the chief ethical systems of modern times, with a view of arriving at the really valid principles which underlie human conduct. These principles are then applied to the various institutions and natural relations of human life. A text-book is used, supplemented by informal lectures. Open to those who have taken Course I.

Second term, three hours.

COURSE III.—Logic. This course aims to give the student a thorough knowledge of the fundamental laws and forms of thought. The principles governing immediate and mediate reasoning will be explained and the leading types of Deduction and Induction will be studied. A text-book will be used, supplemented by lectures, and the student will be drilled in the different figures of the syllogism and in the detection of fallacies. Practical exercises will constitute a large part of the work demanded.

First term, three hours.

Given in 1913-14.

COURSE IV.—Metaphysics. This applies the conclusions reached in the preceding course to the questions relating to reality. Our chief metaphysical ideas are examined and an attempt is made to fix their meaning. These results are then applied to the construction of a consistent and valid theory of the nature of the material world and of the human soul. Open to all who have taken Courses I. and III.

Second term, three hours.

Given in 1913-14.

COURSE V.—History of Philosophy. A study of the chief philosophers and philosophic systems of ancient and modern times. A text-book will be used. Open to all who are taking or have taken Course I.

First term, two hours.

Given in 1914-15.

COURSE VI.—Theism. The true basis of knowledge is inquired into, the traditional arguments for the existence of God are critically examined, and the attempt is made to show that the theistic conception of the world is a necessary postulate of reason and of human life as a whole. Open to all who have taken Courses I. and V.

Second term, two hours.

Given in 1914-15.

COURSE VII.—Philosophy of Religion. This will be chiefly a lecture and reference course in which much reading and independent work will be expected on the part of the student. It will be introduced by a discussion of the religious data of thought and knowledge, the relation between Metaphysics and Theology, the true nature of Religion and the trustworthiness of the Religious Consciousness. It will embrace the comparative study of the various Nature, Culture and Prophetic Religions, thus critically studying Religion in its historic phenomena. It will include a consideration of the Absolute Religion.

Open to those who have taken Courses I. and II., or III.

Second term, three hours.

PHYSICS.

This department comprises courses in theoretical and practical physics.

The aim of the instruction is to give the student a thorough knowledge of the principles and laws that govern physical phenomena, and to acquaint him with the actual operations of these principles and laws. The work is presented to the student by lectures, with experimental demonstrations, combined with recitations, and the solution of problems. In the practical work, the student performs such experiments in the laboratory as will give him a practical knowledge of the principles and laws of physics.

The first courses are elementary and intended primarily for general culture. The remaining courses are designed for those more especially interested in science, those who expect to teach the subject, or those who are planning to pursue engineering.

COURSE I.—College Physics. Mechanics, Sound, Heat, Light, Magnetism, and Electricity. A general course in which the laws and phenomena of physics are carefully developed and illustrated. Lectures, experimental demonstrations, and recitations. All students in this course will meet three times a week. All may, and engineering students must, meet four times a week, the additional hour being devoted to problems and additional text work. Students in this course must schedule at least one hour of Course II. Plane Trigonometry prerequisite.

Throughout the year, three or four hours.

COURSE II.—Experimental Physics. Laboratory work to supplement Course I. The student is required to verify laws of Physics, to make measurements of physical quantities, and determine physical constants. Open to students who are pursuing or who have completed Course I.

Throughout the year, one to three hours.

COURSE III.—Elementary Analytic Mechanics, Statics, Kinematics, and Kinetics. Special attention is given to the application of mechanics to engineering problems. Open to those who have completed Mathematics II. and Physics I.

Throughout the year, two hours.

COURSE IV.—Physical Measurements. A laboratory course involving the adjustment and use of instruments of precision. The significance and accuracy of results, together with the sources of errors and means of their elimination are carefully discussed. Open to students who have completed Course I. and two hours throughout the year of Course II.

First or second term, three hours, or throughout the year, two to four hours.

COURSE V.—General Physics. A course in theoretical physics dealing principally with mechanics, heat, the properties of vapors and gases, the theory of solutions, the kinetic theory of gases, thermo-dynamics, magnetism and electricity. Students electing this course must schedule at least two hours of Course IV. Open to students who have completed Course I. and two hours throughout the year of Course II. and Mathematics II.

Throughout the year, two hours.

COURSE VI.—History of Physics. Open to students pursuing Courses I., III., or V.

Throughout the year, one hour.

OTHER COURSES. For students desiring to specialize in physics, courses dealing with any of the subjects treated under this department will be given as the work is demanded.

POLITICAL SCIENCE.

This department is open to those who have completed one year's work in History. Political theories and principles, ancient, mediaeval, and modern, are examined, as illustrated in the rise and fall of nations, and in the evolution of constitutions. In addition to the cultural worth of these investigations, it is the

purpose to train for intelligent, responsible citizenship in the nation and community.

COURSE I.—Comparative Politics. This course is historical as well as comparative in method. It begins with a study of the state, its origin, development, forms, and aims, and an examination into the government of ancient Greece and Rome and of mediaeval times. Then follow a study of the development and a comparison of the present constitution of England, France, and Germany. The work is based on Wilson's The State, Burgess' Political Science, and Goodnow's Comparative Constitutional Law.

First term, two hours.

COURSE II.—American Administration. This is a comprehensive study of national, local, and municipal government in the United States. Constitutional law is examined, the sources of the national constitution being traced and the development of its chief powers analyzed. The practical working of the administration in central and local control is then studied and particular attention given to the conditions and the rule of cities. The work is based on Cooley's Constitutional Law, Bryce's American Commonwealth, and Wilcox's American City.

Second term, two hours.

PUBLIC SPEAKING.

The courses in public speaking are designed to train the student in the composition and the delivery of the various forms of public address. So far as possible, the work is adjusted to the particular needs of the individual student.

COURSE I.—Written analysis and interpretation of extracts from great orations. Extemporaneous speaking. This course aims to develop directness, earnestness, and dignity in public address. During the first term a careful study is made of the psychological principles which govern effective speaking. Sample speeches are studied and assigned passages are delivered by each student. During the second term

the same work is continued but more extemporaneous work is required.

Elective for students who are taking or have completed English I.

Throughout the year, one hour.

COURSE II.—Argumentation and Debate. First Term. In this term the emphasis is laid upon theory. The principles of analysis, the rules of evidence, the elements of logic, and the kinds of fallacies are discussed. There is also brief-drawing leading up to written and oral debate. Second Term. The theory of the subject is concluded; the emphasis, however, is laid upon practice.

Elective for students who are taking or have completed Course I.

Throughout the year, one hour.

COURSE III.—The Oration. First Term. An examination of the principles of the oration as presented in some such book as Shurter's The Rhetoric of Oratory. Each member of the class is required to present a paper giving the results of a study of some great English or American orator. Second Term. A number of selected orations will be tested in the light of the principles studied during the first term. Collateral readings. The writing of an original oration.

Elective for all students who have completed Course I.

Throughout the year, one hour.

COURSE IV.—Practical platform work in the delivery of the colloquial, elevated, and impassioned styles of oratory. Lectures on the philosophy of expression with accompanying studies to be worked out by the pupil in platform presentation. A systematic study of voice culture is begun in this course. The "Natural Tone Drill" is the system used. A study of the principles underlying gesture work is also required.

Elective for those who have completed Course I.

First term, two hours.

COURSE V.—The study of voice culture is continued in this course in a more advanced and technical way. Dramatic readings from Shakspere and interpretative studies of the mas-

terpieces of literature will be given each student. Some extemporaneous platform work will also be required.

Elective for those who have completed Course IV.

Second term, two hours.

SPECIAL WORK for the individual pupil will be given in private lessons. A fee of ten dollars for each term hour will be charged.

SPANISH LANGUAGE AND LITERATURE.

COURSE I.—Elementary Spanish. Olmsted and Gordon's Spanish Grammar. Reading of such easy Spanish as Alarcón, El Capitán Veneno; Galdós, Dona Perfecta.

Throughout the year, three hours.

Given in 1914-15.

COURSE II.—A study of modern Spanish novels and dramas.

Throughout the year, two hours.

Given in 1913-14.

SURVEYING AND GRAPHICS.

The courses in Surveying and Graphics are based largely on the needs of the surveyor and draughtsman. The work is scientific and yet thoroughly practical in its scope and methods. While these courses are provided for students taking Group VIII., they are open as electives to all students.

COURSE I.—Descriptive Geometry. The problems are those relating to the point, line, the plane, the representation of surfaces, their intersection and development. The course includes instruction in the use and care of instruments, sketching, and isometric and cabinet projections.

Throughout the year, three hours.

COURSE II.—Plane Surveying. This course consists in a series of lectures, supplemented by exercises in the field. The student is taught the use of the chain, tape, compass, transit and level. The work in the drawing room consists in

the computations incident to the work of the surveyor and in plotting from notes taken in the field.

First term, three hours.

COURSE III.—Railway Surveying. This course consists of a study of railway curves and earthworks. The field work includes a reconnaissance, the preliminary and location surveys and the necessary computations and maps.

Second term, three hours.

COURSE IV.—Mechanical Drawing. This course includes plotting, tracing, the making of blue prints, detail and dimension drawing from sketches, models and from other drawings with a different scale.

Throughout the year, three hours.

COURSE V.—Applied Mechanics. This course includes a study of the strength and elasticity of beams and columns, with the application of mechanics to structural design.

Throughout the year, three hours.

PHYSICAL TRAINING.

For Young Men.—The object of this department is to give the student growth and increase of strength; to promote health and symmetrical development. These objects are accomplished by regular class exercises in the gymnasium during the fall and winter, on the field in the spring, and by periods of optional work after class hours. Physical measurements and strength tests of all students are taken upon entrance and at the close of the college course and also at such other times as seem necessary. These form the basis of comparison of the students' conditions and needs, and determine the character and amount of exercise necessary to overcome marked deficiencies, irregular development, or such deformities as are amenable to physical exercise.

Students will receive personal advice with reference

to habits of life, exercise, study, and recreation, as well as suggestions pertaining to personal hygiene.

Regular exercise, consisting of Swedish work, military gymnastics, Indian club, wand, and dumb-bell drills, principles of heavy gymnastics, is required of the men of the sophomore and freshman classes, three hours a week, from the middle of October to the middle of May. Elective work is offered the junior and senior classes.

For Young Women.—The aim of the work is to acquire a symmetrical development of the body as a basis for health and grace. The training is based on Delsarte Philosophy of Expression, and the Swedish and German systems of free movements and light gymnastics. All young women are required to take the prescribed work unless excused on recommendation of the instructor.

The general work includes Indian club and dumb-bell exercises, flexing exercises to overcome stiffness, exercises to develop control of the muscles, and all devices in training that secure freedom of bodily action.

The Gymnasium for Women is equipped with the most modern apparatus. Opportunity is offered to do individual work under the direction of the instructor in addition to the regular class exercises. In the basement of Hulings Hall there is a bowling alley for the exclusive use of young women.

REQUIRED WORK.

For graduation in any Group, all work specified as required must be completed, and additional subjects selected from the general list of electives sufficient to make a total of not less than one hundred twenty term hours. "Term hour" signifies one hour recitation weekly for one term of eighteen weeks. The prescribed work in physical training must also be completed. In the senior year a thesis and an oration are required. But in the Groups leading to the B. S. degree two theses or a thesis and an oration may be presented.

Sixteen recitations weekly is the regular number, but the Registrar may assign seventeen. No student may take more than seventeen or less than twelve hours' work without the approval of the Registration Committee. In no case will additional hours be allowed except on the basis of previous high grade work.

List of Electives.

The following list of elective studies includes all subjects that are elective in any of the Groups. Some of the subjects are required in one or more of the Groups, but are elective in others. The list is open to all students under the conditions named below.

1. The student must be fully prepared for the work.

2. He must avoid all conflicts in hours.

3. So far as possible all required work below his rank and Group Electives must be completed before advanced electives are chosen. This rule may be waived in cases where it is necessary in order that the student may be ready for a particular line of work in the latter part of his course.

4. A study once elected must be pursued to the end of the year or to the completion of the subject. No credit for graduation will be given for partial courses unless by arrangement made with the instructor and the Registrar before the study is begun.

5. The student's choice of elective work must exhibit a definite and coherent plan.

6. The faculty reserves the right to disapprove choice of electives.

The Arabic numerals refer to the number of hour recitations weekly; the Roman numerals refer to the detailed description of the course of instruction found on pages 46 to 84.

	First Term	Second Term
Astronomy I.	3	..
Astronomy II.	..	2
Astronomy III.	..	3

	First Term	Second Term
Astronomy IV.	..	2
Astronomy V.	4	4
Biology I.	4	4
Biology II.	1	1
Biology III.	..	4
Biology IV.	3	3
Biology V.	4	..
Biology VI.	..	4
Biology VII.	4	..
Biology VIII.	3	3
Biology IX.	3	..
Biology X.	..	3
Chemistry I.	4	4
Chemistry II.	3	3
Chemistry III.	4	4
Chemistry IV.	4	4
Chemistry V.	3	3
Chemistry VI.	3	3
Chemistry VII.	3	3
Chemistry VIII.	4	4
Chemistry IX.	3	3
Chemistry X.	2	2
Economics I., II.	3	3
Economics III., IV.	2	2
English II.	2	2
English III.	3	3
English IV.	3	3
English V., VI.	2	2
English VII., VIII.	2	2
English IX., X.	3	3
English XI.	..	3
English Bible II.	2	2
English Bible III.	3	3
French I.	4	4
French II.	4	4
French III.	3	3
French IV.	3	3
French V.	3	3
French VI.	3	3

	First Term	Second Term
French VII.	1	1
Geology I.	..	4
Geology II.	4	4
Geology III.	3	..
German I.	4	4
German II.	4	4
German III.	3	3
German IV.	3	3
German V.	1	1
German VI.	2	2
German VII.	2	2
German VIII.	2	2
German IX., X.	2	2
German XI.	2	2
Greek I.	4	4
Greek II.	3	3
Greek III.	3	3
Greek IV.	2	2
Greek V.	2	2
Greek VI.	4	4
Greek VII.	2	2
Hebrew	4	4
History I.	3	3
History II.	3	3
History III.	3	3
History IV.	2	2
History V.	2	2
Italian I.	3	3
Italian II.	2	2
Latin I.	4	4
Latin II.	3	3
Latin III.	3	3
Latin IV.	2	2
Latin V.	2	2
Latin VI.	2	2
Mathematics I.	4	4
Mathematics II.	4	4
Mathematics III.	3	..
Mathematics IV.	..	3

	First Term	Second Term
Mathematics V.	3	3
Mathematics VI.	2	2
Philosophy I., II.	3	3
Philosophy III., IV.	3	3
Philosophy V., VI.	2	2
Philosophy VII.	..	3
Physics I.	4	4
Physics II.	3	3
Physics III.	2	2
Physics IV.	3	3
Physics V.	2	2
Physics VI.	1	1
Political Science I., II.	2	2
Public Speaking I.	1	1
Public Speaking II.	1	1
Public Speaking III.	1	1
Public Speaking IV., V.	2	2
Spanish I.	3	3
Spanish II.	2	2
Surveying and Graphics I.	3	3
Surveying and Graphics II., III.	3	3
Surveying and Graphics IV.	3	3
Surveying and Graphics V.	3	3

GENERAL INFORMATION.

COLLEGE FEES.

All students pay a fee of $75 a year, one-half payable at the opening of each term. This includes incidental, library, and gymnasium fees.

In the laboratories the following fees are charged each term:

Astronomy II., V. (Per term hour)	$ 2.00
Biology I.	2.00
Biology III.	3.00
Biology IV.	4.00
Biology V. and VI.	5.00
Biology VII.	3.00
Biology VIII.	4.00
Biology IX. and X.	7.50
Chemistry I.	4.00
Chemistry II., III., IV., VI., VII., VIII., XI.	7.50
Chemistry IX.	5.00
Geology I., II.	2.00
Geology III.	4.00
Physics II. (Per term hour)	2.00
Physics IV. (Per term hour)	2.50
Surveying I.	2.00
Surveying II.	3.00
Surveying III.	3.00
Surveying IV.	3.00
Surveying V.	3.00

In addition breakage of material is charged at actual cost.

All college fees are due on the day of registration.

No student is admitted to class until all fees are paid or satisfactorily arranged for.

LIVING EXPENSES FOR YOUNG MEN.

The young men of the College board in Cochran Hall, in fraternity chapter houses, or in private families. The cost of board in Cochran Hall is $110.00 a year. The cost in chapter houses and private families is, as a rule, ten to twenty-five per cent. more. One half the room rent in Cochran Hall is due and payable at the opening of the first term and one half at the opening of the second term. A deposit fee of ten dollars is required when the room is reserved. This fee will be deducted from the second half year's payment. The rate for rooms varies from forty to sixty dollars a year for each student. All rooms except those occupied by seniors are to be surrendered not later than noon on Monday of Commencement Week. The amount for board in Cochran Hall is due as follows: $30.00 at the opening of the year; $30.00 on the second Monday in November; $30.00 at the opening of the second term; $20.00 on the third Monday in April. If the student has a room-mate, the necessary expenses for a year will fall within the following estimates:

	Low.	Liberal.
Term fee	$ 75.00	$ 75.00
Room rent, fuel, light	30.00	50.00
Table board	110.00	125.00
Books	10.00	20.00
Total	$225.00	$270.00

To be added to these figures are the laboratory fees, if the student pursues studies in which such charges are made. The cost of books will vary greatly from

term to term, but a fair average will fall within the limits given.

Expenses other than those enumerated depend largely upon the student's tastes and habits, and the College does not undertake to estimate them. For the items mentioned the figures given are exact. Few students will have occasion for spending more than $300 a year. This, of course, does not include traveling expenses, clothing, or luxuries. An economical student can live on $250 a year; indeed not a few students spend less than this and yet live comfortably.

A circular detailing the expense of living in Cochran Hall will be sent on request.

YOUNG WOMEN.

Allegheny College is a co-educational institution. It endeavors to give young women the highest educational advantages open to young men. Instruction is given in the same subjects and by the same professors, and young women have access to all departments of the College, and are eligible to all honors. For students desiring to combine music with college work, opportunity for excellent instruction is afforded in the Pennsylvania College of Music.

Hulings Hall. Young women not living at home or with relatives are required to live in Hulings Hall. The constant aim is to furnish here an ideal college home for young women, where they shall be surrounded with influences which promote true and cultured womanhood. The Hall is under the charge of the Dean of Women, whose influence, with that of her competent assistants, is constantly felt in the social,

moral, and religious development of the young women under her care.

For the proper maintenance of the Hall as a college home for young women certain specific rules are essential, but it is the policy of the College to make only such regulations as will best protect the interests of those who reside there. As large a measure of self-government as possible is accorded and the young women of the upper classes assume a certain amount of responsibility for the management of the Hall. All proper freedom is allowed, but applicants for admission are reminded that the purpose of residence in Hulings Hall is not primarily social but educational, and the authorities in charge reserve the right to determine what best promotes the educational welfare of the residents in the Hall. A copy of the regulations for the government of the Hall will be sent on request.

The rooms are furnished with single beds, mattresses, pillows, chairs, and tables. Each resident supplies the following articles: sheets, pillow-cases, bed covering, towels, and napkins.

The rates by the year, including board, room, heat and light, are $200.00 for each student. The rooms are all double, so that two students occupy each room. In case a student desires to room alone, there is an additional charge of $50.00. Bills are payable in four installments as follows: $60.00 the opening of the year, $50.00 the second Monday in November, $50.00 the opening of the second term, and $40.00 the third Monday in April. A deposit fee of $10.00 is required when a room is reserved. This fee is credited on the last payment of the year.

AID TO STUDENTS.

Self-Help.—Young men help themselves in several ways. A considerable number of the present students are earning their expenses in whole or in part. Some are employed in light work connected with the College or the boarding clubs. Some find in town opportunities for work of various kinds. A few are serving churches in the neighborhood of Meadville. It is the policy of the College to help students that help themselves.

The Lindley Endowment.—By the will of the late Miss Lucy Lindley, of Meadville, the College received the sum of ten thousand dollars, the interest of which is used to assist students dependent upon their own efforts to obtain an education. Application for aid from this fund should be made to the President. It should be remembered, however, that only a limited number of students can be aided in this way.

The Ballantyne Scholarship Fund.—In 1904 Mrs. Hettie F. Ballantyne, of Pittsburgh, gave to the College thirty thousand dollars in memory of her husband, James Alexander Ballantyne; the fund is to be known as the James Alexander Ballantyne Scholarship Fund. The income is used to pay the college term fees, and in cases of need, certain other expense, of the sons and daughters of ministers of the Pittsburgh Conference, and of young men from the territory of that conference who are studying for the ministry. This fund is administered by the officers of the College Faculty on recommendation of a committee of the Pittsburgh Conference.

High School Scholarships.—The Board of Trustees

has established forty prize scholarships of fifty dollars each, to be awarded each year to honor students in forty of the best high schools in the patronizing territory of the college. In case the graduating class numbers ten or less, the scholarship must go to the one having maintained the highest scholastic rank during his high school course. If the class numbers more than ten, and less than twenty-five, it may go to the first or second in rank, and if there are over twenty-five in the class the scholarship may go to any one of the highest three. The amount of the scholarship is to be applied on the fees of the freshman year.

Educational Society Loans.—Students who are members of the Methodist Church, showing promise of usefulness in any form of Christian activity, may secure loans from the Educational Society. These loans are without interest and need not be paid in full until five years after graduation. These loans are offered not only to candidates for the ministry, but also to all needy and worthy students who show promise of useful service in lines of Christian activity and are endorsed by the home Quarterly Conference. The loans are made by the Society on the recommendation of the Faculty.

No aid from the above mentioned funds, or from any other source, is given to students who use tobacco.

A student having received aid from any of the College funds will be given a letter of dismissal to enter another college only after all such aid shall have been returned.

RELIGIOUS CULTURE.

The College was founded by Christian men for the promotion of Christian culture. It believes that education should always include, as its highest aim, the development of Christian character. It seeks to make the moral and religious life of the college community such that the student will be under as helpful influences as he would be in his own Christian home.

Chapel services are held each morning and all students are required to be present. Regular attendance on Sunday mornings at some church, selected by the student, or his parents, is also advised. Prayer meetings are held Wednesday evening of each week. The results are manifest in the quickening and strengthening of many in the religious life.

The Young Men's Christian Association and the Young Women's Christian Association are active and efficient organizations. Bible study classes and a mission study class are largely attended.

The religious influence of the College is not in any sense sectarian, but Christian. On the rolls this year are representatives from fourteen Christian denominations.

THE ADVISER SYSTEM.

Each student on entering is assigned to some member of the faculty, who serves throughout the freshman year as a special counsellor on all matters in which the student finds the need of frank and friendly advice. The relation between adviser and student is intended to be perfectly fraternal, without restraint on either side. At the beginning of the sophomore year the professor under whom the student does his

major work becomes his adviser for the remainder of his course.

CLUBS.

The Classical Club, composed of the instructors in the classical departments and about twenty-five advanced students, meets for the review of new books and current literature, and for the reading and free discussion of papers submitted by members on lines of classical investigation.

The Quill Club represents the journalistic and literary interests of the College. Its aim is to encourage press correspondents, to co-operate intelligently with the editors of the college publications, and to foster original and creative literary effort. It meets monthly. The membership is limited to thirty.

The German Club is an organization for students under the leadership of the professor of German that meets fortnightly for the purpose of arousing and sustaining interest in the German language as a vehicle of oral expression and of studying German life, institutions, and politics. Membership is open to all students who have had one or more years of regular class-room work in German.

The Philo-Franklin Forum is a society organized on the plan of a national deliberative body. At its weekly meetings various public and college problems are discussed, and parliamentary drill is afforded. Its membership consists of students who are especially interested in debate, under the guidance of representatives of the departments of English and Public Speaking.

Le Petit Salon meets fortnightly for the purpose of French conversation and study of French art, literature, etc. Its alternate sessions are in conjunction with the Meadville branch of the Alliance Francaise, an international organization. The membership is limited to thirty and includes the instructors and advanced students in French.

The Modern Problems Club, under the head of the History Department, meets monthly for the discussion of current, social, economic and political problems. This club, which is a branch of the Intercollegiate Civic League, is limited to juniors and seniors.

PRIZES.

Three prizes are open to competition by students of the college classes.

The Wakefield Oration Prize.—Mr. James A. Wakefield, of Pittsburgh, furnishes a prize of fifty dollars in the name of his grandfather, the Rev. Samuel Wakefield, D.D., awarded in February of each year, to the young man delivering the best oration. The winner of this prize represents the College in the Intercollegiate Civic Oratorical League Contest held in May.

The Philo-Franklin Oration Prize.—The old Philo-Franklin Literary Society has provided a permanent endowment fund of six hundred dollars for prizes in oratory. The income will provide a first and a second prize. The contest is open only to members of the Philo-Franklin Forum.

Heckel Prizes in Science.—Two prizes, a first prize

of thirty-five dollars and a second prize of fifteen dollars, are given each year by Dr. Edward B. Heckel, of Pittsburgh. These prizes are awarded for the best two theses written by graduate or undergraduate students upon scientific subjects. The theses are presented on the first day of May and the prizes awarded the following Commencement Day.

ATHLETICS.

Outdoor exercise and athletic sports under the direction of competent supervisors are fostered as helpful in complete physical training, but are made consistently secondary to scholastic work. No student may take part in athletic events without the consent of the physical director after a physical examination. The athletic interests of the College are in the hands of the Athletic Association, to which all members of the College are eligible, and the business is managed and all funds administered by an Athletic Advisory Board, composed of four members of the faculty and five students. All details of athletic contests must receive the sanction of the Athletic Board, and every precaution is taken to insure clean athletics. Players must be bona fide students taking not less than twelve hours work, must have been registered at the opening of the year in which they compete, may not have more than one condition in any preceding work or be delinquent in the current term's work, and may not receive remuneration, directly or indirectly, for their services. The College is a member of the National Collegiate Athletic Association and conforms to the minimum eligibility requirements of that organization. Competent coaches are provided.

DEGREES.

The degree of Bachelor of Arts in Classical Languages is conferred upon those who complete in a satisfactory manner Group I. or II. The degree of Bachelor of Arts in Modern Languages is conferred upon those who complete in a satisfactory manner Group III. or IV. The degree of Bachelor of Science is conferred upon those who complete in a satisfactory manner Group V., VI., VII., or VIII.

Bachelors of Arts of this College, or of another of equal rank, may pursue, in residence, work in not more than two distinct lines of study; and on the completion of a full year's work, including a satisfactory thesis, receive the degree of Master of Arts.

The degree of Master of Science is conferred on Bachelors of Science who have completed the work of Groups V., VI., VII., or VIII., on the same conditions as the degree of Master of Arts is conferred upon Bachelors of Arts.

Every person receiving a degree from the College pays a diploma fee of five dollars.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

Amon, Frank Owen ..... Greenville
A. B., Allegheny College, 1912—Chemistry.

Dalzell, William Frederic.....Moundsville, W. Va.
A. B., Allegheny College, 1912—Chemistry.

Kelsay, Harriett ..... Meadville
A. B., Allegheny College, 1906—German.

Thompson, Donald Chester ..... Meadville
A. B., Allegheny College, 1912—History, Romance Languages.

SENIORS.

Baldwin, Ruth Frances.....Chautauqua, N. Y.
Ball, Ben Harrison ..... North Girard
Bayard, Ethel ..... McKeesport
Beatty, Maude Irene ..... Oil City
Beck, Perry Alvin ..... Seneca
Bishop, Annie Gray ..... Versailles
Blasdell, David Joslin ..... Dayton, N. Y.
Blucher, Joseph Cooper ..... New Castle
Borland, Carl Allan ..... Erie
Calvin, Claudius Virgil ..... Meadville
Cousins, Esther ..... Hadley
Croasmun, Max Neale ..... Redclyffe
DeLand, Edith May ..... Sheridan, N. Y.
Denison, Howard Harrison ..... Linesville
Dickey, Emma ..... Hartstown
Doane, Norman David ..... Meadville
Dotterrer, William D. ..... Muzette
Dunsmore, Archie Nevada ..... Ford City
Dutton, Helen Maria ..... Meadville
Eckels, Claude Alan ..... Kane

English, Earl Thompson ..... Big Run
Fitzgerald, Thomas Raymond ..... Mt. Pleasant
Foster, Vera Lillian ..... Butler
Fugate, Victor Weston ..... DuBois
Galbraith, Wilbur Floyd ..... Coal Center
Gordon, Harold Jackson ..... Mahoningtown
Grauel, Beulah Marie ..... Aspinwall
Griswold, Florence Minerva ..... Warren
Haine, William ..... North Bloomfield, O.
Hall, Ernest Jackson ..... Russell
Harper, Helen ..... Youngstown, O.
Hart, Henry Paxton ..... Cleveland, O.
Hasely, Charles Clark .....New Castle
Hawk, Louis Leberman ..... Meadville
Hayes, Wesley Glenn ..... Edinboro
Hinckley, Cordon Earle ..... Johnsonburg
Hofelt, William Rufus ..... McKeesport
Hutchinson, Clara Romaine ..... Warren
Kahle, Richard Benton ..... Buffalo, N. Y.
Kelsay, Agnes Ruth ..... Meadville
Kramer, Edmund Rudolph ..... Meadville
Lord, Elizabeth Daggett ..... Vineyard Haven, Mass.
McDonald, Fawn ..... Union City
McKay, Evans ..... Meadville
McKinney, Eva Emily ..... Corry
McLean, Owen Caldwell ..... Sharon
Mates, James Wilson ..... Butler
Maynard, Foresta Hazel ..... Elgin
Miller, Charles Spurgeon ..... Wilkinsburg
Miller, James Martin ..... Pittsburgh
Nevins, Clyde Louis ..... Braddock
Norton, Frances ..... Sherman, N. Y.
Olson, Ellen Hazel ..... Titusville
Perley, Seth Todd ..... Erie
Peterson, LeRoy ..... Kane
Poux, Marie Cecelia ..... Meadville
Rea, Alfred Alonzo ..... Linesville
Rosenberger, Andrew ..... Meadville
Sansom, Dorothy ..... Clarion
Smith, Lottie Vildena ..... Guys Mills

Sparling, Clyde Vincent ..... Irwin
Storer, Happer Beacom ..... New Sheffield
Strickland, Laura Frances ..... Cattaraugus, N. Y.
Thomas, Marian Ward ..... Silver Creek, N. Y.
Thomas, Ruth Miriam ..... Meadville
Tomb, Jessie Matilda ..... Johnstown
Van Horn, John Dick ..... Scottdale
Walters, Mary ..... Meadville
Wells, William Hugh ..... Wellsville, O.
Whitney, Ernest ..... West Springfield
Wieler, Harry Julius ..... Wheeling, W. Va.
Wilkinson, Abram ..... Meadville
Williams, Elsie Beth ..... Meadville
Williams, Rose Green ..... Girard
Winn, Charles Burton ..... Basking Ridge, N. J.
Yost, Edna A. ..... South Fork

Seniors, 76.

JUNIORS.

Anchors, Muza ..... New Kensington
Armstrong, Alice Dillon ..... Laurelville, O.
Bacon, Ethel Katherine ..... Meadville
Barackman, Paul Freeman ..... Linesville
Bardall, Mary Elizabeth ..... Moundsville, W. Va.
Beisel, Ben Raymond ..... Pittsburgh
Boyer, Kile ..... Evans City
Breckenridge, Banks Bon ..... Meadville
Browning, Mabel Ruth ..... Scottdale
Burwell, Charles Sidney ..... Meadville
Cares, Charles William ..... Meadville
Carr, Clarence James ..... Meadville
Carroll, Marion Agnes ..... Kane
Coon, William Edwin ..... Albion
Davis, Clara Rosannah ..... Union City
Delp, August ..... Meadville
Dodd, Ruth ..... Zanesville, O.
Dotterrer, Charles Milton ..... Muzette
Elbel, Louis Edward ..... Punxsutawney
Else, James Gibson ..... Youngstown, O.
Fabian, Frederick William ..... Diamond
Fegely, Walter Hanchett ..... North Girard
First, Fearl Cecil ..... Carlton
Fisher, Stella Adda ..... Ellwood City
Freer, Nellie Elizabeth ..... Galion, O.
Girsham, Ellen May ..... Yenangyoung, Burma
Graham, James Hebron, Jr., ... Meadville
Hammond, Gertrude Lenore ..... Reynoldsville
Harper, Edgar Robert ..... Meadville
Hastings, Josephine ..... Allegheny
Henry, Willard Lawrence ..... Clinton, N. J.
Hotson, Mary Helen ..... Meadville
Jeffery, Morey Potts ..... Meadville
Johnston, Paul William ..... Oil City
Kellogg, Hazel Gay ..... Titusville
Kline, Paul Vorse ..... Oil City
Lane, James Garfield ..... Meadville
Lane, Winfield Scott ..... Mt. Pleasant
McKay, Paul ..... Meadville

McNulty, Charles Grover ..... Conneautville
MacGowan, James Reese ..... Smethport
Mechlin, Fred Joseph ..... Grove City
Miller, Carl Cummings ..... Mt. Pleasant
Mosier, Rodney Dean ..... Hayfield
Mueller, Gertrude Anna ..... South Bend, Ind.
Nicholls, Jonter Arthur ..... Sharon
Nichols, Pierrepont Herrick ..... Meadville
Norton, Samuel Harry ..... Meadville
Parmenter, Ottie Albert ..... Erie
Pierson, John Clarence ..... Meadville
Ramsey, Harry Floyd ..... Renfrew
Ramsey, Nathan LeRoy ..... Renfrew
Rea, Caroline Lois ..... Linesville
Reed, Gertrude ..... Sandy Lake
Reed, Jessie Stoner ..... Scottdale
Richard, Frank Alvin ..... Turtle Creek
Ricker, Ruth Mildred ..... Meadville
Robinson, Paul ..... Robinson
Seitz, Margaret ..... Hamilton
Shryock, Gertrude Miriam ..... Meadville
Smith, Rachel Eleanor ..... Meadville
Strauss, Charles Leonard ..... Saegertown
Sweetland, Clair ..... South Dayton, N. Y.
Taylor, John Theodore ..... Irwin
Thoburn, Isabella ..... Meadville
Thoburn, Theodore ..... Meadville
Thoburn, Thomas Wilson ..... Meadville
Thomas, Mary Helen ..... Meadville
Thomas, Paul Eugene ..... Meadville
Thompson, Ada Belle ..... Cochranton
Tiffany, Jessie Marion ..... Meadville
Walker, Charles Roland ..... Bruin
Weidle, Everett Steele ..... Erie
Weissenborn, Thelma Ora ..... Jersey City, N. J.
Whiting, William Alonzo ..... Conneautville
Wilkins, Bernice ..... Union City
Zelwis, Albert ..... Pittsburgh

Juniors, 77.

SOPHOMORES.

Abrams, Dorothea Blanche ..... Jamestown, N. Y.
Allmendinger, Raymond Burgett ..... Russell
Askey, Edith F. ..... Oil City
Askey, Harrison L. ..... Hoquiam, Wash.
Baker, Cecil Boyer ..... Espyville
Baker, Charles Frank ..... Meadville
Barkley, Mary Josephine ..... Braceville, O.
Barnhart, Frances ..... Scottdale
Bassett, Harriette Burritt ..... Bridgeport, Conn.
Boyd, Howard ..... Meadville
Bright, John ..... New Castle
Brooks, Frank Garey ..... Rochester
Brooks, Harold King ..... Mill Run
Brownell, Howard Fred ..... Smethport
Chambers, Keith Eri ..... Tidioute
Chapin, Alice Elizabeth ..... Meadville
Chapin, Viva Waive ..... Union City
Cohen, Isadore ..... Sharon
Crawford, Robert ..... Cooperstown
Dashiell, Dorothy ..... Washington, D. C.
Davenport, Irene Bessie ..... Meadville
Domer, Vashti Lucile ..... Cuyahoga Falls, O.
Doran, Edwin ..... Pittsburgh
Dotterrer, Melvin Allen ..... Kellettville
Downing, Robert Harold ..... Meadville
Duffy, Hazel Marie ..... Corry
Dunbar, Donald George ..... Meadville
Dunbar, Douglas Manson ..... Meadville
Dunlap, Charles Walter ..... Pittsburgh
Ebaugh, Esta Bernice ..... Bellevue
Edmonds, Audley Rexford ..... Bruin
Ellis, Janet Adelia ..... Oil City
Fahr, Herman Henry ..... Meadville
Flick, Charles Willis ..... Tionesta
Fowler, Katharine Roe ..... Meadville
Fox, Ralph ..... Kingsville, O.
Gealy, Ethel May ..... Oil City
Gilbert, Carl A. ..... Scottdale
Gillespie, Mae ..... Meadville

Godsave, William Albert ..... Meadville
Gornall, Oliver ..... Saegertown
Gould, Louise ..... West Springfield
Graham, Orson James ..... Oil City
Grant, Harry Vane ..... Meadville
Hartman, Hartley John ..... Pittsburgh
Heath, Clyde Hartson ..... Corry
Henton, Fay ..... Spartansburg
Henton, Fern ..... Spartansburg
Hill, Theodore C. ..... North East
Hines, Raymond Henry ..... Meadville
Holt, Hety Linda ..... Brockwayville
Howell, Marie Julia ..... Buffalo, N. Y.
Hunt, Sara Althea ..... Meadville
Hutchinson, Joe Berklett ..... Parkersburg, W. Va.
Jacobs, Homer R. ..... Emlenton
Johnston, Linda Beatrice ..... Meadville
Jones, Maree Elizabeth ..... Youngstown, O.
Kemp, Alexander Hershman ..... Ingram
Kendall, Ralph Newton ..... Conneautville
Lavely, Ruth Elizabeth ..... Meadville
Leiphart, George Bardeen ..... Springboro
Lewis, Iva Belle ..... West Elizabeth
Lindberg, Paul L. ..... West Homestead
Lippitt, Margaret Lucile ..... Meadville
Long, Wendell Partridge ..... Naples, N. Y.
McKinley, David ..... Jamestown
McKinney, Arlene ..... Philadelphia
McKinney, Velma Frances ..... Philadelphia
McLean, Margaret ..... Meadville
McMahon, Agnes Margaret ..... Erie
MacConnell, Charles Marshall ..... Franklin
Manne, Roy Egar ..... New Castle
Mellon, Melvin Guy ..... Conneaut Lake
Metcalf, Malcolm McMaughton ..... Jamestown, N. Y.
Miller, Clarence Arthur ..... Meadville
Miller, Earle French ..... Pittsburgh
Miller, Lawrence Theodore ..... Meadville
Mook, Harold Floyd ..... Saegertown
Morrison, Leon Albert ..... Erie
Mulfinger, Carl Leonard ..... Meadville

Mullian, Beatrice Maree ..... Westford
Nebinger, Ruth Grove ..... Homestead
Nelson, Lillian ..... McKeesport
Norris, S. Evelyn ..... Meadville
Palmer, Malcolm Rice ..... Meadville
Pappenhagen, Louis ..... Meadville
Parsons, Willard Deichman ..... Saegertown
Paulson, Jehu DeWitt ..... Meadville
Peck, Lottie Elizabeth ..... Albion
Pilgram, Ralph Edward ..... Hadley
Platt, Rose Alta ..... Oil City
Quinn, Hannah Marie ..... McKeesport
Ramirez, Pedro Ortiz ..... Manuabo, Porto Rico
Reichel, Frank H. ..... Saegertown
Reis, Lillian Morton ..... Saegertown
Reynolds, Caryl Moore ..... Pittsburgh
Ricker, George Albert ..... Meadville
Robinson, Edward A. ..... Sharpsburg
Rose, George DeWitt ..... North Kingsville, O.
Sansom, Mary Moorhead ..... Clarion
Shaner, George A. ..... Butler
Sherman, Joe Mac ..... Conneaut Lake
Shields, Charles Frederic ..... New Kensington
Simpson, Margaret Mae ..... New Brighton
Singley, Helen Josephine ..... Meadville
Smith, Margaret Elizabeth ..... Meadville
Smith, Theodore Fell ..... Greenville
Smock, Jessie Bernice ..... Meadville
Sutton, Edith Mildred ..... Butler
Swartley, Annette ..... Meadville
Taylor, Harrie Smith ..... Cambridge Springs
Walker, Mabel Elizabeth ..... Harbor Creek
Waring, Emma Goodwill ..... Mansfield, O.
Wasson, Harry Christopher ..... Meadville
Webster, Rex Duane ..... Avonia
Wells, Louis ..... Wellsville, O.
Wiley, Sara Virginia ..... Elizabeth
Wing, Helen Kissick ..... New Castle
Witherup, M. Lester ..... Franklin
Yocum, William Ward ..... Meadville

Sophomores, 120.

FRESHMEN.

Adams, Helen Rose ..... Meadville
Aey, Charles Arthur ..... New Castle
Allgood, Ruth Louise ..... New Castle
Allshouse, Charles Vance ..... Creighton
Amon, Fred Hughes ..... Greenville
Angove, Dortha R. ..... Oil City
Armstrong, William Jefferson, Jr., ... Kane
Arnold, Floyd Elmer ..... Athens
Bail, Homer Milton ..... Springboro
Barns, Robert Howard ..... Albion
Bash, Lawson Greene ..... Waynesburg
Beatty, Vina Marguerite ..... Oil City
Bell, Samuel, Jr., ... West Middlesex
Best, Josephine Elizabeth ..... Meadville
Bitler, Tillie Ella ..... Meadville
Black, Robert J., Jr., ... McKeesport
Blasdell, Robert Allen ..... Dayton, N. Y.
Brownell, William Arthur ..... Smethport
Bundy, Walter R. ..... Quaker City, O.
Campbell, Ginevra Isabel ..... Kittanning
Campman, Seeley Franklin ..... West Middlesex
Carroll, Catherine ..... Meadville
Carroll, Mary Carrier ..... Brookville
Clancy, Kathleen Luella ..... Conneautville
Cole, Helen ..... Meadville
Colt, Harold Dayton ..... Cambridge Springs
Cox, Raymond Andrew ..... Kane
Cunning, George Burgess ..... East Liverpool, O.
Curry, Albert Gore ..... Wilkinsburg
Dorsey, George ..... West Brownsville
Dorsey, Marjorie ..... West Brownsville
Downing, Florence ..... Meadville
Drake, Homer Emmet ..... Ashtabula, O.
Dundon, Lewis J. ..... Edinboro
Eiler, Marguerite Ethel ..... Meadville
Ellis, William Andrew ..... Oil City
Enright, Thomas Joseph ..... Erie
Ferguson, Mary Jeannette ..... Meadville
Ford, Freda Marie ..... Conneautville
Foster, Lois Clara ..... Oakmont

Gaskill, Hazel Mary ..... Meadville
Gates, Helen Haldena ..... Oil City
Gealy, Fred D. ..... Oil City
Gleason, Harold D. ..... Meadville
Hanaway, Helen Marie ..... Meadville
Harper, Daphne ..... Meadville
Harper, Harold Vernon ..... Butler
Hasek, Helen Georgia ..... Franklin
Hawkey, Alice Lucille ..... Tidioute
Herriott, Albert Thompson ..... Sharpsville
Hickman, Elmer Wallace ..... Arnold
Hoffman, Mary Theresa ..... Sheffield
Hoffman, Ray Earl ..... Phalanx, O.
Horner, Edgar Jamison ..... Connellsville
Hudson, Ethel Gertrude ..... Greensburg
Hughes, Arthur Fitzgerald ..... Brookville
Irvin, Louise Reynolds ..... Meadville
Johnson, Curtis Corydon ..... Meadville
Jones, Clyde C. ..... Cambridge Springs
Jones, Paul Ashton ..... West Brownsville
Kelley, Martha M. ..... Butler
Kightlinger, Emma Florence ..... Meadville
Kleckner, Ethel Lillian ..... Cambridge Springs
Klinginsmith, John Glenn ..... Conneaut Lake
Kramer, Norbert Clair ..... Meadville
Ling, Ernest ..... Meadville
Lowe, Louis Malcolm ..... Sugar Grove
McClintock, Nellie Hazel ..... Union City
McKay, Leo ..... Sharon
McKenna, Anna Elizabeth ..... Kane
McLean, Bailey Courtney ..... Meadville
McQuiston, Samuel F. ..... Meadville
Mackenzie, Helen Pithie ..... Oil City
Marcy, Arthur B. ..... Cambridge Springs
Mark, John Nicol ..... Glasgow, Scotland
Mellon, David Roy ..... Conneaut Lake
Miller, Marion Ruth ..... Erie
Munhall, Albert Francis ..... Meadville
Murray, Walter Irvin ..... Reynoldsville
Nash, Clarence Almerion ..... Chautauqua, N. Y.
Neale, Faye Caroline ..... Reynoldsville

Nelson, Benn Elwin ..... New Castle
Newlin, Edwin Benson ..... McKeesport
Nicklin, Harry Donald ..... Franklin
Peebles, Ethel May ..... Meadville
Phillips, Norman E. ..... Sheffield
Pierson, Harry H. ..... Meadville
Pillow, Richard H. ..... Butler
Reed, Earle Lyons ..... Butler
Reis, Wilbur Whippo ..... Saegertown
Rhoades, Robert L. ..... Mt. Pleasant
Rial, Leona Catherine ..... Ruffsdale
Ritchie, LaMarr ..... Soldier
Roberts, Georgia Pauline ..... Albion
Roberts, Nellie Genevieve ..... Meadville
Ross, Hazel Alma ..... Oakmont
Ross, Margaret ..... Chautauqua, N. Y.
Sage, John ..... Farrell
Sanner, Fred Henderson ..... Wilkinsburg
Scott, Walter Leland ..... Kane
Shea, Gertrude Helen ..... Meadville
Sheets, Sankey L. ..... Greensburg
Snebold, George Thomas ..... Natrona
Stebbins, Dorothy Merle ..... Silver Creek, N. Y.
Stevenson, Charles Howard ..... Coraopolis
Strong, Anna ..... South Fork
Sutton, Gerald Raymond ..... Cambridge Springs
Taylor, Blanche ..... Meadville
Tear, John W. ..... Painesville, O.
Thoburn, Bernice ..... Meadville
Trace, Fred Birch ..... Meadville
Van Slyke, Henry Vincent ..... Sinclairville, N. Y.
Welker, Roy A. ..... Meadville
Whipple, Charlotte ..... Oil City
Whipple, Marian Alice ..... Oil City
White, Edith Mary ..... Meadville
Wildman, Harold Henderson ..... Meadville
Wolf, Charles R. ..... Connellsville
Wolf, Paul Burton ..... Connellsville
Wright, Donald Thomas ..... Oil City
Zimmerman, Joseph Allfree ..... Pittsburgh

Freshmen, 121.

SPECIAL STUDENTS.

Davis, Hugh N. ..... Meadville
Gilbert, Earl Brooks ..... Scottdale
LeFever, Ora L. ..... Meadville
Nicklin, George Leslie ..... Franklin
Palmer, Benjamin Harvey ..... Meadville
Runninger, Guy M. ..... Franklin
Singsen, Robert Allen ..... Providence, R. I.
Swift, Carrie Ladds ..... Franklin

Special, 8.

SUMMARY.

	Men.	Women.	
Resident Graduates	3	1	4
Seniors	45	31	76
Juniors	48	29	77
Sophomores	69	51	120
Freshmen	73	48	121
Special	7	1	8
Total	245	161	406

DEGREES CONFERRED JUNE 19, 1912.

Doctor of Divinity.

Rev. Robert Emet Brown. Rev. Robert Guthrie Freeman
Rev. William Stacy Lockard

Master of Arts.

Walter LeRoy Kulp Arthur André Swanson

Bachelor of Arts.

Wesley Ernest Abbott
George John Allgier
Frank Owen Amon
Lyman Beecher Angus
Oscar Henry Bodenhorn
Nellie May Bollman
Berdeen Braymer
Frank Howard Callahan
William Frederick Dalzell
Glenn Huston Davison
Barbara Leavenworth Deane
Florence Beatrice Donlin
Ruth Elizabeth Dorworth
Marie Abrilla Fisher
Lida Alma Geiss
Augusta Gibbons
Fred Karl Herpel
Thomas Hughes
Louise Torrence Jordan
Caroline Lauffer
Horace Thomas Lavely
Henry Samuel Howard Leitzel
Elizabeth Pauline Ling
John Price McClellan
Cecilia Elizabeth McClure
Florence Grace McElwain
Willard Finley Maxwell
Margaret Ellen Megirt
Sumner Ely Nichols
Ned Osthaus
Mary Jane Patterson
Annie Helene Peck
Robert James Piersol
Grace Mary Prenatt
Mildred May Reed
Anna Adelaide Remler
Ethel Salmon
William Elias Sheffer
Marguerite Black Shelmadine
Cecilia Forney Shires
Florence Junebell Shires
Charles Stanley Smith
Mary Stuart Sowash
John A. Mueller Stewart
Robert Weller Thomas
Donald Chester Thompson

Ross Burns Litten
Jane Bertha Lockwood
Charles Lawrence Lore
Charles Ellsworth Vogel
Margaret Ellen West
Katherine Eleanor Wheeling
Elma White

Bachelor of Science.

Wilhelmina Maria Anderson
Chester Allan Baum
Lynn Merl Davis
Weldon Roy Grant
Howard Harrison Hamman
Harrison Randall Hunt
Alfred Rose McClure
Carl Newton More
Arthur Carlton Nodine
Arthur Ruettgers

PHI BETA KAPPA.

ETA CHAPTER OF PENNSYLVANIA.
Chartered September 2, 1901.

OFFICERS.

President.

President William H. Crawford.

Vice President.

Hon. John J. Henderson.

Secretary.

Professor William A. Elliott.

MEMBERS INITIATED IN JUNE, 1912.

From the Senior Class.

George John Allgier
William Frederick Dalzell
Glenn Huston Davison
Elizabeth Pauline Ling
Grace Mary Prenatt
Mildred May Reed
Anna Adelaide Remler
William Elias Sheffer
Mary Stuart Sowash
Robert Weller Thomas

Annual Address, June 17, 1912.

Professor Robert W. Rogers, Ph.D., LL.D.,
Subject, "The Recovery of the Ancient Orient."

Allegheny College Summer School.

The summer session at Allegheny College will open Monday, June 23, and extend to Saturday, August 2, 1913. Instruction will be given in the courses described later every day except Saturday for the six weeks.

The plan of the summer school is to give work that will meet primarily the needs of the three following classes of students: (1) teachers who may desire a better training for their work in the class room, or who are preparing to pass examinations required for the various teachers' certificates; (2) college students who may desire to obtain advanced college credits or to remove conditions, and even high school students desiring to be admitted to college may be able to remove entrance conditions; (3) any person who may desire to enter the courses for the purpose of self-improvement. No requirements are necessary for admission, except that each professor will satisfy himself that the candidate is qualified to be admitted to his course. College students may receive, upon the recommendation of the department, two semester hours for each course they complete with satisfactory examination. Three courses will be considered full work, and no student will be allowed to carry more than four. Students will be required to be in regular attendance until the end of the session, if they desire college credit.

The fee for tuition will be $20 per student.

A bulletin containing more definite information may be obtained on application to the Registrar, Guy. E. Snavely.

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THE COLLEGE BULLETIN

SERIES XIII, No. 1
FEBRUARY, 1914

CATALOGUE
1913-1914

ALLEGHENY COLLEGE

FOUNDED IN 1815

NINETY-NINTH YEAR

CATALOGUE

OF

ALLEGHENY COLLEGE

FOR

1913-1914

MEADVILLE, PA.
1914

THE ALLEGHENY COLLEGE BULLETIN

PUBLISHED QUARTERLY
BY THE COLLEGE.

SERIES XIII, No. 1.
FEBRUARY, 1914.

Entered as second-class matter in the postoffice at Meadville, Pa.

CATALOGUE FOR THE ACADEMIC YEAR 1913-14

AND ANNOUNCEMENTS OF COURSES FOR 1914-15

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1914

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CALENDAR.

1914.

April 24, Friday—Founders' Day, a holiday.

29, Wednesday—Last day for presenting Senior Orations and Theses.

May 11, Monday—Choice of Senior Speakers.

30, Saturday—Memorial Day, a holiday.

June 4-13—Second Term Examinations.

14, Sunday, 10:45 a. m.—Baccalaureate Sermon by President William H. Crawford.

7:45 p. m.—Annual Sermon before the Christian Associations.

15, 16, Monday and Tuesday—Entrance Examinations.

15, Monday, 2:00 p. m.—Class Day Exercises.

4:00 p. m.—Annual Meeting of the Phi Beta Kappa Society.

7:30 p. m.—Phi Beta Kappa Address.

9:00 p.m. —President's Reception.

16, Tuesday, 9:00 a. m.—Annual Meeting of the Board of Trustees.

4:00 p. m.—Organ Recital.

7:30 p. m.—Commencement Concert.

17, Wednesday, 9:30 a. m.—Commencement Exercises.

1:00 p. m.—Meeting of the Alumni Association. Annual Dinner.

6:00 p. m.—Fraternity Banquets.

SUMMER VACATION.

1914.

Sept. 15, Tuesday—First Term Begins.

14, 15, Monday and Tuesday—Entrance Examinations.

15, Tuesday—Registration of New Students.

16, Wednesday—Registration of Old Students.

17, Thursday, 8:00 a. m.—Recitations Begin.

Nov. 4, Wednesday—Last Day for Submitting Subjects of Senior Orations and Theses.

26, Thursday—Thanksgiving Day, a holiday.

Dec. 18, Friday, 12:30 p. m.—Recitations Close.

CHRISTMAS RECESS.

1915.

Jan. 6, Wednesday, 8:00 a. m.—Recitations Resumed.

13, Wednesday—Last Day for Presenting Senior Orations and Theses.

Jan. 20-29—First Term Examinations.

Jan. 29, Friday, 4:00 p. m.—First Term Ends.

Feb. 2, Tuesday—Second Term Begins. Registration of Students.

3, Wednesday, 8:00 a. m.—Recitations Begin.

4, Thursday—Wakefield Oratorical Contest.

22, Monday—Washington's Birthday, a holiday. The College Dinner.

Mar. 3, Wednesday—Last Day for Submitting Subjects of Senior Orations and Theses.

April 2, Friday, 12:30—Recitations Close.

SPRING RECESS.

April 13, Tuesday, 8:00 a. m.—Recitations Resumed.

24, Saturday—Founders' Day, a holiday.

28, Wednesday—Last Day for Presenting Senior Orations and Theses.

May 10, Monday—Choice of Senior Speakers.

June 20-24,—One Hundredth Anniversary Week.

BOARD OF TRUSTEES.

Ex-Officio.

HIS EXCELLENCY JOHN K. TENER,
Governor of the Commonwealth.

HON. JAMES T. MITCHELL,
Chief Justice of the Supreme Court.

HON. JOHN C. BELL,
Attorney General.

HARVEY HENDERSON, ... Pittsburgh
JOHN J. HENDERSON, LL.D., . . . Meadville
THEODORE L. FLOOD, D.D., LL.D., . Meadville
REV. JOSEPH HORNER, D.D., LL.D., Pittsburgh
REV. JOSEPH W. MILES, D.D., . . Pittsburgh
JOHN C. BARDALL, . Moundsville, W. Va.
FRANK A. ARTER, ... Cleveland, O.
JAMES P. COLTER, ... Meadville
JAMES W. KINNEAR, ... Pittsburgh
GORTON B. CHASE, ... Greenville
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REV. ANDREW C. ELLIS, D.D., . . Meadville
REV. WILLIAM H. CRAWFORD, D.D., LL.D., Meadville
JOHN E. RIGG, M.D., . . . Wilkinsburg
EDWARD APPLEYARD, . . Jamestown, N.Y.
WESLEY B. BEST, ... Meadville
JESSE C. MCDOWELL, ... Pittsburgh
JOHN V. RITTS, ... Butler
CHARLES MILLER, ... Franklin
JOHN S CRAIG, ... Pittsburgh
AUSTIN BLAKESLEE, ... Du Bois
REV. NOBLE G. MILLER, D.D., . . Blairsville
TRUMAN D. COLLINS, ... Nebraska
NELSON A. RIST, ... Dawson
JOHN J. CARTER, ... Titusville
REV. J. C. MCDONALD, ... Meadville

ARTHUR L. BATES, ... Meadville
SIMPSON S. FORD, ... Cleveland, O.
ROBERT B. WARD, ... New York
C. E. WELCH, ... Westfield, N. Y.
BISHOP JAMES M. THOBURN, D.D., LL. D., Meadville
SARAH B. COCHRAN, ... Dawson
REV. ROBERT M. FRESHWATER, D.D., New Philadelphia, O.
J. A. HUSTON, ... Sewickley
GEORGE GREER, ... New Castle
BYRON A. WALKER, ... Erie
W. S. HORNER, ... Pittsburgh
REV. J. M. THOBURN, D.D., . . . Ben Avon
*D. E. BYLES, ... Oil City
REV. C. W. MINER, D.D., ... Sharon
IDA M. TARBELL . . . . . New York
ARTHUR W. THOMPSON, . . . Baltimore, Md.
EDWARD B. HECKEL, M.D., . . Pittsburgh
HARRY W. DUNLAP, ... Pittsburgh
WILL N. RIDGE, ... New York
WILLIAM J. ARMSTRONG, M.D. . . . Kane
J. W. FAWCETT, M.D., . . . McKeesport

Officers of the Board.

FRANK A. ARTER, ... President
JOHN J. HENDERSON, ... Vice-President
JAMES P. COLTER, ... Secretary

Executive Committee.

WILLIAM H. CRAWFORD, ... Chairman
JAMES P. COLTER, ... Secretary
FRANK A. ARTER.
WESLEY B. BEST ANDREW C. ELLIS

Treasurer of the College.

GEORGE D. THOMAS.

---

*Deceased

FACULTY.

WILLIAM H. CRAWFORD, D.D., LL.D.,
PRESIDENT,
Professor of Ethics.

WILLIAM T. DUTTON, C. E.,
Francis Asbury Arter Professor of Mathematics and Surveying

WILLIAM A. ELLIOTT, A.M., L.H.D.,
Professor of Greek Language and Literature.

ERNEST ASHTON SMITH, Ph.D.,
Alumni Professor of History and Economics.

CLARENCE F. ROSS, A.M.,
Bradley Professor of Latin Language and Literature.
SECRETARY.

FRANK C. LOCKWOOD, Ph.D.,
Eliza Kingsley Arter Professor of English Language and Literature.

GEORGE A. MULFINGER, Ph.D.,
Professor of German Language and Literature.

CAMDEN M. COBERN, Ph.D., Litt.D.,
James M. Thoburn Professor of English Bible and Philosophy of Religion.

CHARLES J. LING, Ph.D.,
Mary M. Newton Professor of Physics and Astronomy.

OSCAR P. AKERS, Ph.D.,*
Professor of Mathematics.

R. EDWIN LEE, Sc.D.,
Professor of Chemistry.

GUY E. SNAVELY, Ph.D.,
Professor of Romance Languages and Literatures.
REGISTRAR.

ALICE HUNTINGTON SPALDING,
Instructor in Public Speaking.
DEAN OF WOMEN.

CHESTER A. DARLING, Ph.D.,
Professor of Biology and Geology.

CHARLES E. HAMMETT,
Professor of Physical Education and Director of Athletics.

CHARLES E. DECKER, A.M.,
Assistant Professor of Biology and Geology.

JOHN H. RUSSELL, Ph.D.,
Assistant Professor of Economics and Political Science.

STANLEY S. SWARTLEY, A.M., †
Instructor in English.

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*Absent on leave, Sabbatic year.
†Absent on leave, 1913-14.

EDITH ROWLEY, A.M.,*
Librarian.

SABRA VOUGHT, A.B.,
Acting Librarian.

MALCOLM H. DEWEY, A.M.,
Instructor in German.

A. H. HARROP, Ph.D.,
Instructor in Greek and Latin.

McQUILKIN DeGRANGE, A.M.,
Instructor in English.

THEOPHILE DAMBAC, B-es-L.,
Instructor in French.

JOHN P. TRICKEY, B.S.,
Instructor in Chemistry.

ARTHUR RUETTGERS, B.S.,
Instructor in Mathematics.

THOMAS R. FITZGERALD, A.B.,
Laboratory Assistant in Chemistry.

WALTER H. FEGELY,
Laboratory Assistant in Chemistry.

F. CECIL FIRST,
Laboratory Assistant in Biology.

BEN BEISEL,
Laboratory Assistant in Physics.

*Absent on leave, 1913-14.

COMMITTEES OF THE FACULTY.

Registration.

THE PRESIDENT — THE REGISTRAR
PROFESSOR ROSS — PROFESSOR SMITH
PROFESSOR COBERN

Courses of Study.

PROFESSOR ELLIOTT — PROFESSOR DUTTON
PROFESSOR LOCKWOOD — PROFESSOR MULFINGER
PROFESSOR LING

Discipline.

THE PRESIDENT — PROFESSOR DUTTON
PROFESSOR ELLIOTT

College Organizations.

PROFESSOR SMITH — PROFESSOR ROSS
PROFESSOR LOCKWOOD

Library.

PROFESSOR LOCKWOOD — PROFESSOR MULFINGER
PROFESSOR ELLIOTT

Graduate Instruction.

PROFESSOR DARLING — PROFESSOR SNAVELY

Athletics and Gymnasium.

PROFESSOR LEE — PROFESSOR DUTTON
MR. DEWEY

Accredited Preparatory Schools.

PROFESSOR ROSS — PROFESSOR LING
PROFESSOR DARLING

College Book Store.

PROFESSOR LEE

Catalogue.

PROFESSOR SNAVELY — PROFESSOR COBERN
PROFESSOR DECKER

College Council.

PROFESSOR LING — PROFESSOR SMITH

Men's Dormitories

PROFESSOR HAMMETT — PROFESSOR RUSSELL
MR. DEWEY

DESCRIPTION OF THE COLLEGE.

HISTORICAL SKETCH.

Allegheny College was founded in 1815 by citizens of Meadville, then a frontier village of some three or four hundred inhabitants. The first president was the Rev. Timothy Alden, a Presbyterian minister. The institution was chartered in 1817, and in 1820 the corner stone of the first building, Bentley Hall, was laid. In 1831 Dr. Alden resigned, and in 1833 the Rev. Martin Ruter of the Pittsburgh Conference of the Methodist Episcopal Church, was elected to the presidency. The institution, while pronouncedly Christian, is conducted as the charter requires, on liberal principles, no person having any advantage, or being subjected to any disadvantage, on account of his religious views.

LOCATION.

Allegheny College is located in Meadville, Pennsylvania, on the main lines of the Erie and Bessemer & Lake Erie railroads. An electric road gives direct connection with Erie and intervening points. Meadville has a population of more than twelve thousand. It is an old and well established town with attractive streets and residences, cultured society, and many educational influences. Being largely a residential town it has few of the disadvantages of city life. It has most of the advantages of a city, such as paved

streets, an effective sewerage system, an abundant supply of wholesome water from driven wells, arc and incandescent electric lights, natural gas, and an electric street railroad connecting all parts of the town with the college grounds.

The surrounding country is remarkable for its beautiful and diversified scenery. Within a short radius are some twenty miles of wild and rugged ravines of exceeding beauty, and the foothills of the Alleghenies which surround the town make the situation one of great attractiveness. The neighborhood is especially rich in material for the study of Botany and Geology.

BUILDINGS AND GROUNDS.

The college campus contains sixteen acres on the north edge of the town, nearly a mile from the business section, at an elevation of two hundred feet above French Creek and twelve hundred feet above the sea. It is abundantly shaded by numerous varieties of trees, many of them planted by students nearly a century ago. The ravine which passes through the campus and the situation overlooking the town and the valley for miles below, give a natural beauty hardly surpassed. The grounds are well provided with granolithic walks, and both grounds and buildings are kept in an attractive and sanitary condition.

The heating plant, situated in the upper ravine, supplies steam heat to all the college buildings. It is entirely adequate to the needs of the College.

Bentley Hall bears the name of the Rev. William Bentley, D.D., of Salem, Massachusetts, who gave his valuable library to the College. The corner stone

was laid in 1820. It consists of a central three-story building with tower, and two wings with massive pillars. The building contains the administration offices of the College and recitation and lecture rooms. The third floor is devoted to the halls of the literary societies with their libraries.

During the summer of 1905 extensive improvements were made in the interior of the building. New hard wood floors and oak wainscoting were put in, and new furniture throughout has been provided. These changes, made at a cost of about seven thousand dollars, have rendered the building very attractive and entirely modern without lessening its charm as a fine example of colonial architecture.

Ruter Hall, which bears the name of the Rev. Martin Ruter, D.D., the second president of the College, is a substantial brick building, erected in 1855, chiefly by the citizens of Meadville. On the first floor is the geological museum of the College. On the second floor are recitation rooms, a drawing room, an instrument room, and an office, used by the departments of Mathematics and Civil Engineering. The third floor is occupied by the department of Biology. Two laboratories, an office, a store room, a library and a lecture room occupy this floor.

Hulings Hall, a four-story brick building, ninety-four by one hundred forty feet, was erected in 1881, by Mr. Marcus Hulings, of Oil City, and citizens of Meadville. It is used as a home for young women, and accommodates about eighty. The building is well lighted and ventilated, is provided with fire escapes, and is in thoroughly good sanitary condition. It has recently been almost entirely refurnished. The rear

wing of the building contains on the fourth floor five large society halls; the first and second floors are occupied by the gymnasium for young women. The gymnasium has a clear floor space fifty-four by forty feet and is finished throughout in Georgia pine. It is provided with a full line of modern apparatus. In the basement are dressing rooms and baths.

Wilcox Hall of Science, named for Mr. and Mrs. Robertson Wilcox, of Girard, Pa., is a modern brick building built in 1892 for the department of Physics. It contains an amphitheatre lecture-room, seating one hundred students, physical laboratories, and a basement work shop. There are ten working rooms. In the construction of the building especial care was taken to provide abundant light.

The Gymnasium, erected in 1896, adjoins the athletic field. It is in the early Italian style of round arched architecture, and is constructed of native stone and brick. The building is T-shaped in plan, the front portion being two stories high, exclusive of the tower. The first floor contains the director's room, locker rooms, and baths. On the second floor there is an assembly room, and also a committee room, both for general use. The gymnasium floor, which occupies the rear extension, has a clear space of forty-five by eighty feet unobstructed by pillars, the roof being supported by steel trusses. The building is equipped with the appointments of a first class modern gymnasium.

Newton Observatory, completed in 1901, was made possible by the gift of Mrs. Mary M. Newton, of Batavia, Illinois, in memory of her husband, Captain D.

C. Newton, once a student in the College. It is a rock-faced stone building of fine architectural appearance, containing in addition to the observing room, a transit room, a computing room, and the director's office.

Ford Memorial Chapel was erected in 1901-2 through the generosity of Captain John B. Ford, of Creighton, Pa., in memory of his wife. The cost of the building was $34,000. It is of rock-faced Cleveland sandstone, in Gothic Romanesque style, with a spacious auditorium seating four hundred fifty, besides a gallery seating one hundred fifty, and an oratory seating one hundred fifty. The rich stained glass windows and the harmonious interior appointments add much to the stateliness of the building.

The chapel is provided with a splendid pipe organ, the gift of the granddaughters of Captain Ford, Mrs. J. A. Ballantyne and Misses Nellie and Stella Ford, who contributed $6,000 for this purpose. The organ was designed by Mr. W. L. Mayer, of Pittsburgh, and was built by the late Julius Neef, of Philadelphia. It has three manuals, and 1,920 pipes, and is supplied with the best devices of great modern organs.

The Library Building, the gift of an anonymous donor, was completed in 1902 at a cost of over $40,000. Its dimensions are eighty-five by seventy-four feet. It is constructed of vitrified brick with terra cotta trimmings, in Italian-Renaissance style. In addition to the stack room with a capacity of sixty thousand volumes, it contains a cataloguing room, librarian's rooms, general reading room, and a large reference reading room. On the second floor are the faculty room and department seminar rooms. The interior

appointments of the library are entirely in accord with the artistic character of the building.

Alden Hall. This building is one of the latest additions to the group of college buildings, and is devoted to the use of the department of Chemistry. It is built of gray vitrified brick and terra cotta, in English school style, with three floors and a basement. The building is commodious and well lighted. It contains ten rooms, and is well equipped with such apparatus as is necessary to the successful prosecution of work in the department.

Cochran Hall. By the generous gift of Mrs. Sarah B. Cochran, of Dawson, Pa., amounting to over sixty thousand dollars, provision has been made for a College Commons for young men. The building is constructed of brick with light terra cotta trimmings and tile roof. The architecture is of the Italian villa style with simple dignified lines, making the building, as a whole, the most imposing of the entire college group. The building contains on the first floor a reception hall, a main dining room, and a large lounging room for general purposes. The second floor is devoted to students' studies, sleeping rooms, and baths, and to a guests' suite. The building not only provides first class boarding accommodations, and at reasonable rates, but constitutes a rallying center for the young men of the College. Apart from the dining room and dormitory features of the building, there are rooms for the Young Men's Christian Association which are admirably adapted to their purpose. In addition to the spacious room to be used as assembly, reading, and social room there are an office for the secretary, a

committee room, and a cloak room. Just off these apartments are four bowling alleys with shuffle board spaces adjoining.

LABORATORIES AND MUSEUM.

The Physical Latoratory. The department of Physics occupies Wilcox Hall of Science. It comprises a large, well-lighted lecture-room, a general laboratory, special laboratories for heat, light and electricity, two dark rooms, the professor's office, and department library and store room. The lecture-room is well adapted to the giving of illustrated lectures; and the department has a very complete projection outfit and a good collection of slides. The department has also the facilities for the construction of special pieces of apparatus needed in the laboratory.

The Chemical Laboratories. The department of Chemistry occupies the building known as Alden Hall. It consists of ten rooms and is devoted in its entirety to the uses of this department. On the first floor are located the private office and laboratory of the head of the department, balance room, laboratory for quantitative and gas analysis, reading room containing the department library, and a large well-ventilated lecture-room with complete equipment for experimental and illustrated lectures. On the second and third floors are found separate laboratories for general chemistry, organic chemistry, analytical chemistry, physical chemistry, and a dark room for photo-chemistry. In the basement are located the store room and laboratory preparation room.

All the laboratories are well lighted and ventilated,

and amply provided with facilities for various kinds of chemical work.

The Astronomical Observatory is equipped with a nine-inch equatorially mounted telescope, the objective of which was a gift of Mr. J. C. McDowell, of Pittsburgh, and was made by Brashear, of Allegheny, Pa. The graduated silver circles for this telescope were given by Mrs. Elizabeth Whiting, of Meadville. A seven and one-half inch instrument, made by Alvin Clark and Son, is also included in the equipment. Other equipment includes a transit, a chronometer, a sextant, and a siderial clock. The clock is the gift of the children of Milton B. Goff, LL. D., in memory of their father, an alumnus and former professor of mathematics in the College. The mountings and other fixtures of the observatory were supplied by Messrs. Warner and Swasey, Cleveland, O.

Through the generosity of Colonel J. J. Carter, of Titusville, Pa., there has been added to the equipment of the observatory an elaborate filar micrometer for use with the nine-inch, designed and made by George N. Saegmuller, of the Bausch-Lomb-Saegmuller Co., of Rochester, N. Y. From the same source comes a high grade six-inch mining transit fitted with a Saegmuller solar attachment and a Shattuck solar attachment, thus enabling the department to prosecute field work in astronomy which is of value to engineers. A chronograph, made by Gaertner, of Chicago, and a break circuit attachment for the clock complete the new equipment which will enable the department to offer work to the student that will be comparable with other observatories having a glass of like magnitude.

Engineering Apparatus. In Mathematics and Engineering all necessary instruments, such as transits, levels, rods, and chains, for illustrating pure and applied mathematics are provided and are in practical use by the students in these subjects.

The Biological Laboratories are placed on the third floor of Ruter Hall where there is ample space and good light. The main laboratory receives the direct north light and is fitted with tables and microscopes for twenty students. In the same room are placed a large aquarium table fitted with running water, other tables for balanced salt and fresh water aquaria, and cases containing the herbarium and other material used in the laboratory work. The other half of the floor is divided into a lecture room, an office, a store room, and a smaller laboratory for advanced students. The lecture room contains cases for a collection of animals, charts, models, etc., used in lectures. The library, consisting of three hundred well selected volumes, is placed in two cases, one in the larger and one in the smaller laboratory. The smaller is fitted with all needed histological, embryological, and bacteriological apparatus.

The Geological Laboratory. During the past few years this department has used the biological laboratories for geological and mineralogical laboratory work. A small adjoining room has been fitted up for a geological library and serves also for the storage of the topographical maps and other supplies used in the laboratory work. A fine new polarizing microscope has just been purchased and the nucleus of a collection of rock slides started.

The Collections of the Natural History Museum are placed on the first and third floors of Ruter Hall. The geological and mineralogical collections are especially noteworthy and contain many valuable specimens including some type forms. The mineralogical collections have been entirely rearranged and relabeled during the past few years, and the more than eight thousand specimens form one of the finest collections to be found in the entire state and serve as a splendid basis for the course in mineralogy recently introduced. The geological collections include the Smithsonian collection of rocks and rock-forming minerals as well as many other specimens, while the paleontological collection includes the series of Ward casts and many originals. Within the past few years, the nucleus of an exceedingly interesting and valuable collection of local fossils has been obtained largely through the efforts of William Millward, of the Class of 1909.

The zoological collections consist of several thousand specimens which are kept in cases on the first and third floors. The collections of invertebrates preserved in liquid, shells, and mounted birds are all very useful for the courses in Zoology. A herbarium which includes most of the local flora is placed on the third floor.

The museum is open to the public every Saturday, while the College is in session, from one to three p. m. At other times visitors are admitted on application to the custodian.

THE LIBRARY.

The Library contains 27,500 bound volumes, 3,500 volumes of periodicals and a large number of unbound

pamphlets, in all about 38,000 printed productions The additions to all departments for 1911-12 were 1,825. The books are classified according to the decimal system. A dictionary card catalogue and other modern facilities for convenient use are provided. The reference room shelves about 2,000 volumes of books "reserved" for the various departments together with the dictionaries, encyclopedias and general reference works. These are in the latest editions and new works are added each year.

The administration aims to make the Library not only an auxiliary to the class instruction, but the center of the intellectual life of the College. The classical, literary and scientific clubs have headquarters in the building and rooms are set aside for advanced classes studying along special lines. The rules are such as will allow the widest use of the books with only such necessary restrictions as will secure the greatest good to the greatest number. The reading room regularly receives nearly one hundred periodicals, including local papers, dailies, and the best weeklies both religious and secular. An exchange table of college publications is supplied by the Campus and the Literary Monthly.

The Library is a government depository and also receives the state publications. Each department has an annual appropriation for the purchase of the latest technical and reference works. The access to such a wide range of books and periodicals, the training in the use of catalogues, bibliographies and reference works, and the wide range of technical and general periodical literature available are of great advantage

to the student. A book service is maintained with the Carnegie Library of Pittsburgh by which almost any book not available here may be secured quickly and at slight expense to the student. Exchange relations are also maintained with several other libraries. The Meadville Theological School extends library privileges to this College, and the students have access to the Meadville Public Library containing over 12,000 catalogued volumes.

The Library is open during the college year from 8 a. m. to 5:30 p. m. and three evenings a week.

GENERAL PURPOSE.

This institution is a college, not a university. It therefore does not undertake to fit the student to enter any profession without further technical study. In all departments of instruction the end sought is not specialization but thorough discipline and correct habits of observation and reflection. It is on this principle that the curricula are based. Under the various groups about three-fourths of the subjects are prescribed. These studies are such as have been found to be best adapted to secure symmetrical development. A wide range of electives is offered, enabling the student to lay the foundation for subsequent professional study. By a wise choice of electives a student may in some cases shorten by a year the time required to complete his professional course. The experience of the college proves that its graduates are enabled to distinguish themselves in various careers whenever they have added to their college training the special equipment for a profession.

A large portion of college graduates enter not upon professional but upon business life. The general principle above stated applies to them with as much force as to those who enter professions. A college training does not teach a man how to do business successfully, but it does prepare him to do business rapidly, and to attain large success, if he has the requisite talent.

REQUIREMENTS FOR ADMISSION.

The requirements for admission are stated in terms of units. *A unit is defined as a course of study that has been pursued for a school year of at least thirty-six weeks, with four or five periods per week of not less than forty minutes each. However, not less than one hundred twenty periods of sixty minutes each or their equivalent shall be counted a unit.*

No science subject may be credited for entrance unless accompanied by satisfactory evidence of laboratory or field work. Exception may be made in the case of physiology.

Subjects accepted for entrance:

	Minimum.	Maximum.
English	3	4
Mathematics	2½	4
Foreign Language	4	7
Latin		
Greek		
French		
German		

Not less than two units in any language will be counted, unless continued further in college.

History	1	3
Ancient	..	1
Mediaeval and Modern	..	1
English	½	1
United States	½	1
Civics	..	½

Drawing		
Free Hand	..	½
Mechanical	..	½
Science	1	3
Biology	½	1½
Chemistry	..	1
Physics	..	1
Physiography	..	½
Geology	..	½

Not more than one unit of Biology may consist of General Zoology or Botany. Physiology may count as much as one half unit.

From the preceding list of units 15 must be offered for entrance to the freshman class. Of these 11½ units are absolutely required and 3½ may be elected from any of the units in the foregoing list.

The 11½ required units are as follows:

English	3
Mathematics	2½
Science	1
History	1
Foreign Language	4

For admission to Groups I. and II., these 4 units must be in Latin; to Groups III. and IV., two units must be in Latin; to Groups V., VI., VII., and VIII., there is no restriction concerning the Latin.

The various groups are described on pp. 40-45.

For conditional admission in the aforementioned Latin prerequisite see page 76.

DESCRIPTION OF UNIT REQUIREMENTS.

ENGLISH. The following is a definition of Units one, two, three and four, respectively, that may be offered as entrance credits in English:

(Unit one) Composition and Rhetoric.

(Units two and three) Reading from the list of required Readings below.

(Unit four) A history of English literature, with additional readings from the English classics.

Reading and Practice. A limited number of books are assigned for reading. The candidate is required to present evidence of a general knowledge of the subject-matter of these books, and to answer simple questions on the lives of their authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and calls for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified to by his instructor, containing compositions or other written work done in connection with the reading of books. In preparation for this part of the requirement it is important that the candidates shall have been instructed in the fundamental principles of rhetoric.

The books set apart for the examination will be:—

In 1914—Group 1 (two to be selected), The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings and Daniel, together with the books of Ruth and Esther; Homer's Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; Homer's Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's Aeneid. The Odyssey, Iliad, and Aeneid should be read in English translations of recognized literary excellence. For any unit of this group a unit from any other group may be substituted.

Group 2 (to be selected), Shakespere's Merchant of Venice, Midsummer-Night's Dream, As You Like It, Twelfth Night, Henry V, Julius Cæsar.

Group 3 (two to be selected), Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; Scott's Ivanhoe, or Quentin Durward; Hawthorne's House of the Seven Gables; Dickens' David Copperfield, or Tale of Two Cities; Thackeray's Henry Esmond; Mrs. Gaskell's Cranford; George Eliot's Silas Marner; Stevenson's Treasure Island.

Group 4 (two to be selected), Bunyan's Pilgrim's Progress, Part I; The Sir Roger de Coverley Papers in the Spectator; Franklin's Autobiography (condensed); Irving's Sketch Book; Macaulay's Essay on Lord Clive, and Essay on Warren Hastings; Thackeray's English Humorists; Selections from Lincoln, including at least the two Inaugurals and Lincoln's Speeches in Independence Hall and at Gettysburg, Last Public Address, Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's Oregon Trail; Thoreau's Walden, or Huxley's Autobiography, and Selections from Lay Sermons, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; Stevenson's Inland Voyage, and Travels with a Donkey.

Group 5 (two to be selected), Palgrave's Golden Treasury (First Series) Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's Elegy in a Country Churchyard, and Goldsmith's Deserted Village; Coleridge's Ancient Mariner, and Lowell's Vision of Sir Launfal; Scott's Lady of the Lake; Byron's Childe Harold, Canto IV, and The Prisoner of Chillon; Palgrave's Golden Treasury (First Series) Book IV, with special attention to Wordsworth, Keats and Shelley; Poe's Raven; Longfellow's Courtship of Miles Standish and Whittier's Snow Bound; Macaulay's Lays of Ancient Rome, and Arnold's Sohrab and Rustum; Tennyson's Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad; Home Thoughts from the Sea; Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, and Up at a Villa—Down in the City.

Study and Practice. A smaller number of books are assigned for more careful study. The examination based on these books covers subject-matter, form, and structure, and also tests the candidate's ability to express his knowledge with clearness and accuracy. In addition, the candidate may be required to answer questions involving the essentials of English grammar and questions on the leading facts in those periods of English literary history to which the prescribed works belong.

The books set for this part of the examination will be:—

In 1914 — Shakepere's Macbeth; Milton's L'Allegro, Il Penseroso, and Comus; either Burke's Speech on Conciliation with America, or both Washington's Farewell Address, and Webster's First Bunker Hill Oration; Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

MATHEMATICS.—Elementary Algebra. (One unit or one and one half units.) The work in this subject should include the following: fundamental operations, factors, common divisors and multiples, involution including the binomial theorem for positive integral exponents, radicals, quadratic equations, ratio and proportion, theory of exponents, and arithmetic and geometric series.

A maximum of one and a half units may be given when the time spent in preparing to meet this requirement be at least a year and a half. It is suggested that the work of the last half year should be done late in the preparatory school course to insure a distinct and ready articulation with the required work of the freshman year in college. It is desirable that the student should come to his college work with well formed habits of neatness and accuracy, and that he have a ready knowledge of so much of mathematics as he may have studied.

Plane Geometry. (One unit.) The general properties of rectilinear figures, similar polygons, areas, and the measurement of polygons and the circle; the solution of original exercises, including loci problems.

Solid Geometry. (One half unit.) The relation of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, cones, and the sphere; the solution of original exercises, including loci problems.

Advanced Algebra. (One half unit.) A somewhat more extended treatment in review of the important topics of Elementary Algebra; such as fractional and negative exponents, radicals, factoring, the theory of quadratic equations (including maximum and minimum, and simultaneous quadratic equations, ratio, proportion, the progressions and the binomial theorem for positive integral exponents. In addition to these, the following topics should be included: permutations and combinations, undetermined coefficients, partial fractions, logarithms, theory of equations, including Horner's method, and the solution of numerical equations of higher degree.

Plane Trigonometry. (One half unit.) The definitions and relations of the six trigonometric functions as ratios, proofs of formulas, especially those for the sine, cosine and tangent of the sum or difference of two angles, the relation between functions of an angle and those of double angles and half angles, inverse functions, and the solution of right and oblique triangles with applications.

LATIN.—The following requirements, as proposed by the Commission on College Entrance Requirements in Latin, have been adopted by the College:

I. AMOUNT AND RANGE OF THE READING REQUIRED.

1. The Latin reading required of candidates for admission to College, without regard to the prescription of particular authors and works, shall not be less *in amount* than Cæsar, Gallic War, 1-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneid, I-VI.

2. The amount of reading specified above shall be selected by the schools from the following authors and works: Cæsar (Gallic War and Civil War) and Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust, (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid) and Ovid (Metamorphoses, Fasti, and Tristia).

II. SUBJECTS AND SCOPE OF THE EXAMINATIONS.

1. **Translation at Sight.** Candidates will be examined in translation at sight of both prose and verse. The vocabulary, constructions, and range of ideas of the passages set will be

suited to the preparation secured by the reading indicated above.

2. **Prescribed Reading.** Candidates will be examined also upon the following prescribed reading: Cicero, orations for the Manilian Law and for Archias, and Vergil, Aenied, I, II, and either IV or VI at the option of the candidate, with questions on subject-matter, literary and historical allusions, and prosody. Every paper in which passages from the prescribed reading are set for translation will contain also one or more passages for translation at sight; and candidates must deal satisfactorily with both these parts of the paper, or they will not be given credit for either part.

3. **Grammar and Composition.** The examinations in grammar and composition will demand thorough knowledge of all regular inflexions, all common irregular forms, and the ordinary syntax and vocabulary of the prose authors read in school, with ability to use this knowledge in writing simple Latin prose. The words, constructions, and range of ideas called for in the examinations in composition will be such as are common in the reading of the year, or years, covered by the particular examination.

The credits given are as follows: Elementary Latin Book, such as Collar and Daniell or Bennett, including the reading of at least fifteen pages of easy connected prose, such as Viri Romæ, one unit; Cæsar with composition, one unit; Cicero with composition, one unit; Vergil, one unit.

GREEK.—(One unit.) First Greek Book and at least six chapters of Book I of Xenophon's Anabasis.

(One unit.) Xenophon's Anabasis through Book IV. Xenophon's Anabasis, Books V, VI, and VII, or Xenophon's Hellenika, Books I and II, or twelve hundred lines of Homer. Prose composition based on the texts read.

(One unit.) Homer's Iliad or Odyssey, about three thousand lines. Thorough knowledge of poetic forms and prosody. About thirty pages of Attic prose with composition based thereon.

Throughout the work in Greek emphasis should be laid on accurate knowledge of forms and the ordinary rules of syntax,

on the ability to read Greek aloud correctly and expressively, and on the ability to write rapidly and correctly in Greek simple English sentences based on the texts read.

Students expecting to enter Greek I in College should offer at least two units of entrance Greek. Students without Greek for entrance may begin the subject in Greek A and in one year be prepared to enter Greek I.

GERMAN.—(One unit.) The first year's work should comprise: careful drill in pronunciation, dictation, memorizing of easy colloquial sentences, drill in the rudiments of grammar, i. e., the inflection of nouns, adjectives, pronouns, weak verbs, and the more usual strong verbs; the use of prepositions; the simplest rules of syntax and word order; simple exercises in conversation; and the reading of from seventy to one hundred pages of a graduated text from a reader or from editions of easy texts.

2. (One unit.) The second year's work should comprise: the reading of one hundred fifty to two hundred pages of literature in the form of easy stories and plays; a further study of syntax; conversation based on the text read; practice in the translation into German of easy variations upon the matter read, and also in off-hand reproduction, sometimes orally and sometimes in writing, of the substance of selected passages.

3. (One unit.) The work of the third year includes, in addition to the courses above, the reading of about four hundred pages of moderately difficult prose or poetry, with constant practice in giving, sometimes orally, sometimes in writing, abstracts, paraphrases, or reproductions from memory of selected portions of the matter read; also grammatical drill upon the less usual strong verbs, the use of the article, cases, uses of the subjunctive and infinitive, complex sentence structure, uses of modal auxiliaries and participial constructions.

4. (One unit.) The fourth year of the study should be devoted to such works as Goethe's Iphigenie, Tasso, Hermann und Dorothea, Schiller's Wallenstein, standard prose of the grade represented by Freytag or Keller, some consideration of the chief lyric poets, prose composition, and some practice in theme writing.

FRENCH.—(One unit.) First year French should comprise the following: (1) Careful drill in pronunciation, which should be re-enforced by dictation and conversation in the class-room. (2) Study of the Grammar, including the more unusual irregular verbs; the grammar work in Part I of Fraser and Squair's French Grammar would be sufficient. (3) Regular practice in putting simple idiomatic sentences into French. (4) Reading of about two hundred duodecimo pages of easy standard French, such as is to be found in the more popular French Readers, Malot's Sans Famille, Bruno's Tour de la France, the stories of Erckmann-Chatrian, etc.

(One unit.) Second year French should include: (1) Continued work in dictation. (2) Memorizing of short poems. (3) Further practice of turning English into idiomatic French. (4) More detailed study of grammar, such as is contained in Fraser and Squair, Part II. (5) Reading of some three hundred pages of standard French of gradually increasing difficulty, such as the stories and plays of About, Daudet, Labiche, Mérimée, Sand, Scribe, etc.

(One unit.) Third year French should comprise the reading of some five hundred pages of more difficult French, including some masterpieces of French drama. Moreover, the student should be able to reproduce and paraphrase into idiomatic French parts of the works read. Texts should be selected from the works of Balzac, Beaumarchais, Corneille, Hugo, Marivaux, Molière, Musset, Racine, Vigny, Voltaire, etc.

ANCIENT HISTORY.—(One unit.) To the fall of the Roman Empire. Texts—Botsford, West, Myers.

MEDIAEVAL AND MODERN.—(One unit.) Texts, Myers, Robinson.

ENGLISH HISTORY.—(One half or one unit.) Cheyney, Larned.

AMERICAN HISTORY.—(One half or one unit.) Channing, Fiske, McMaster.

CIVICS.—(One half unit.) Fiske, Hart.

FREE-HAND DRAWING.—(One half unit.) The candidate

must possess the ability to sketch, both in outline and with shading, simple objects such as a house, a small piece of machinery, a simple landscape, a group of geometrical figures, or an architectural ornament.

Certificates covering the above work, together with at least twenty specimen drawings, will be accepted.

MECHANICAL DRAWING.—(One half unit.) The candidate must be able to make projections in plan and elevation of geometrical figures, and to prepare working drawings of simple architectural and mechanical subjects.

Certificates covering this work, together with at least twenty plates, illustrating the elements of Descriptive Geometry or of simple machine parts, will be accepted.

BIOLOGY.—Courses in Zoology, Botany, Physiology and Hygiene will also be accepted under this head provided they meet the requirements here given. Satisfactory outlines of courses are given in the syllabus published by the N. Y. State Educational Department.

a. (One unit.) A course in General Biology extending throughout a year which shows the fundamental relationship between the animal and plant kingdoms and shows man's place in nature. A part of this course may deal with human physiology. The course must be accompanied with laboratory work and the student must be prepared to submit a laboratory notebook properly certified if required to do so.

b. (One half to one unit.) Courses in General Zoology or General Botany of at least one half year in length. It is recommended that these be courses which deal with habits and ecological relationships as well as structure. Forms of animals or plants of local or of economic importance should be used as type forms as far as possible. Courses in Botany dealing solely with the flowering plants or courses in Zoology dealing solely with birds or insects will not be accepted. Laboratory work will be required in all cases and the student must be prepared to submit a properly certified note-book.

c. (One half unit.) Physiology and Hygiene. This must be a one half year course, and it is recommended that laboratory work be done with the course.

GEOLOGY.—(One half unit.) The materials of the earth, the work of the atmosphere, ground-water, running water, snow and ice, the oceans and lakes, vulcanism and diastrophism; rock structures; the history of the geologic periods from the Archæozoic to the present.

Laboratory. Two hours per week for half a year. The common rock-forming minerals; the classification of rocks; topographic maps and geologic folios illustrating the geologic processes and the distribution, nature, and structure of rocks of the different periods; the fossil plants and animals most typical of each period. Norton's Elements of Geology or Brigham's Text-book of Geology.

PHYSIOGRAPHY.—(One half unit.) The origin and significance of the great relief features of the earth, and the topographic forms of the land; the earth as a planet; the atmosphere; the climate; weather predictions. Appropriate field and laboratory work must accompany the study of the text. Suitable text books are Salisbury's Briefer Course in Physiography, Gilbert and Brigham's or Dryer's Physical Geography.

CHEMISTRY.—(One unit.) The candidate's preparation in Chemistry should include: (a) The study of at least one standard text-book on General Chemistry, to the end that the pupil may obtain a comprehensive view of the more important facts of Elementary Chemistry. (b) Individual laboratory note-book, certified by the candidate's instructor, must be presented.

PHYSICS.—(One unit.) The amount and extent of the class work demanded for entrance in physics may be indicated by such texts as Millikan and Gale's First Course, Hoadley's Elements or Carhart & Chute"s High School Physics. In laboratory the work should include at least thirty quantitative experiments supplementing the class work, performed by the student, and recorded in a carefully prepared note-book.

ADMISSION WITH CONDITIONS.

Students who have not fully completed the subjects specified for the course they wish to enter may be admitted to the freshman class conditionally, but not

if the sum of their deficiencies exceeds a half year's work, nor if in the judgment of the Registration committee they are not fitted to do college work to advantage. They will be admitted to such college classes as they may be qualified to enter. Under certain fixed restrictions, credit may be obtained on entrance for work done in college subjects and such advanced credit may be offset against deficiencies in preparatory work until the latter can be removed.

SPECIAL STUDENTS.

Persons desiring to pursue studies in the College are, as a rule, required to be prepared to enter the freshman class as candidates for one of the degrees. Under exceptional circumstances, however, persons who are not candidates for a degree may be admitted as special students and allowed to pursue selected studies. Every such person will be required to satisfy the Faculty that he is prepared to do, with profit, the work which he selects. Each case will be decided on its own merits.

ENTRANCE EXAMINATIONS.

Examinations for admission are held on Monday and Tuesday of Commencement week, and on Monday and Tuesday preceding the opening of the First Term.

All examinations except those taken in Meadville are under direction of the College Entrance Examination Board, whose certificates are accepted in place of examinations in all subjects.

ADMISSION BY CERTIFICATE.

In place of examinations in studies required for admission to College, certificates will be accepted from approved high schools having a regular four years'

course in case of students regularly graduating in such a course. Certificates will also be accepted in case of graduates of a three years' high school course provided they pass entrance examinations of not less than three units additional to their certificate.

Certificates will not be accepted in case of students who are not graduates of the school from which the certificates are presented. *Students entering by certificate are considered as on trial until the completion of the mid-year examination, and the right is reserved to require further preparatory work from students who are not able to make satisfactory progress in college classes.*

In all cases an examination in English is required, adapted to test the student's power of correct and idiomatic expression. No one will be accepted in English whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs.

Principals of schools desiring to have their schools placed on the approved list are invited to address the President of the College.

Diplomas from the Regents of the State of New York will be accepted. All other certificates must be made out on special blanks, which will be sent on application.

The applicant for admission should also bring with him all laboratory note-books, exercise books, and other evidence of work done, properly certified to by the teacher.

All candidates for admission must present satisfactory testimonials of good moral character; and certificates of regular dismission will be required from those who have been matriculated at other institutions.

Requirements for Graduation to the Degree of Bachelor of Arts.

FRESHMAN YEAR.

	First Term.	Second Term.
English I.	3	3
English Bible I.	1	1
Mathematics or Science	4	4

One course from each of two of the following departments: Latin, Greek, French, German, History.

These two courses will count as part of the student's Group Electives as detailed on pp. 40, 41.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For Group I. he should choose Latin and Greek.

For Group II. he should choose Latin or Greek and German or French.

For Group III. he should choose French and German.

For Group IV., if he is to do his major work in History, he should choose History and Latin or Greek or French or German. If he is to do his major work in English, he may choose any two of the subjects.

Not less than fifteen and not more than seventeen hours are to be taken weekly.

SOPHOMORE YEAR.

	First Term.	Second Term.
*Mathematics or Science	4 or 3	4 or 3
History or Political Science	3	3

Group Electives [See pp. 40, 41] to make not less than fifteen and not more than seventeen hours weekly.

*Candidates for the degree of Bachelor of Arts are required to take fourteen hours of mathematics or science, or fourteen hours of mathematics and science, i. e., this entire number of hours may be elected from mathematics or from laboratory science, or part from mathematics and the remainder, enough to make fourteen hours, may be elected from laboratory science subjects.

JUNIOR YEAR.

	First Term.	Second Term.
Philosophy I., II.	3	3

This subject may be taken in the sophomore year if the student is to do his major work in philosophy.

Group Electives and Free Electives to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis the first term and an oration the second term. See page 85.

Group Electives and Free Electives chosen from the list on pages 86-89 to make a total for the course of not less than one hundred twenty term hours.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of Groups I., II., III., IV., in which his work is to be done.

The head of the department in which the major work is done becomes the student's adviser. See page 96.

Group I.

1. In one department, Greek or Latin.....20 hrs.
2. In a second department, Latin or Greek.....14 hrs.
3. In a third department, English, History, Philosophy, French, or German.....14 hrs.
4. In a fourth department, English, History, Philosophy, French, or German..... 6 hrs.

Group II.

1. In one department, Latin or Greek.....20 hrs.
2. In a second department, French or German.....14 hrs.
3. In a third department, English, History, Philosophy, Latin, Greek, French, or German.....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin, Greek, French, or German..... 6 hrs.

Group III.

1. In one department, French or German.....20 hrs.
2. In a second department, German or French.....14 hrs.
3. In a third department, English, History, Philosophy, Latin, or Greek.....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin or Greek..... 6 hrs.

Students who present for admission less than two units in a modern language must, if this Group is chosen, take not less than eight hours additional to the above requirements, in the language chosen for the major subject.

Group IV.

1. In one department, English, History, or Philosophy.20 hrs.
2. In a second department, English, History, or Philosophy .....14 hrs.
3. In a third department, Latin, Greek, French, or German .....14 hrs.
4. In a fourth department, Latin, Greek, French, or German ..... 6 hrs.

Requirements for Graduation to the Degree of Bachelor of Science.

FRESHMAN YEAR.

	First Term.	Second. Term.
English I.	3	3
English Bible I.	1	1
Foreign Language: French, German, Latin, or Greek	4	4
Mathematics I.	4	4
Science—Biology, Chemistry, Physics, or Surveying	4	4

This course will count as part of the student's Group Electives as detailed on p. 44.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For Group V., he should choose Biology.

For Group VI., he should choose Chemistry.

For Group VII., he should choose Physics.

For Group VIII., he should choose Mathematics or Surveying.

SOPHOMORE YEAR.

	First Term.	Second Term.
*History or Political Science	3	3
Foreign Language, continuing the language taken in the freshman year	4 or 3	4 or 3

Group Electives [See page 44] to make not less than fifteen and not more than seventeen hours weekly.

JUNIOR YEAR.

	First Term.	Second Term.
Philosophy I., II.	3	3

Group Electives and Free Electives to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis the first term and an oration or a thesis the second term. See page 85.

Group Electives and Free Electives chosen from the list on pages 86-89 to make a total for the course of not less than one hundred twenty term hours.

*This work may be postponed to the junior year in case it is necessary for the student to continue a subject begun the freshman year.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of Groups V., VI., VII., or VIII., in which his work is to be done.

The head of the department in which the major work is done becomes the student's adviser. See page 96.

Group V.

1. Biology ..... 20 hrs.
2. Chemistry ..... 14 hrs.
3. Physics ..... 8 hrs.

Group VI.

1. Chemistry ..... 20 hrs.
2. Biology or Physics ..... 14 hrs.
3. Biology or Mathematics or Physics ..... 8 hrs.

Group VII.

1. Physics ..... 20 hrs.
2. Chemistry ..... 14 hrs.
3. Mathematics ..... 8 hrs.

Group VIII.

1. Mathematics or Surveying ..... 20 hrs.
2. Physics or Mathematics ..... 14 hrs.
3. Biology or Chemistry ..... 8 hrs.

COURSE OF INSTRUCTION

BY DEPARTMENTS.

In this detailed description of the courses of instruction the number of "hours" refers to the number of hour recitations weekly. Each term is eighteen weeks in length.

All courses are offered yearly, except as especially noted.

Any elective course may be withdrawn if not chosen by at least four students.

Two hours of laboratory work are counted as equivalent to one recitation hour.

ASTRONOMY.

The courses in Astronomy have two objects in view. Courses I. and IV. are general descriptive courses, designed to give the student a comprehensive view of the science and to acquaint him with the history of the growth of the universe, and the laws which govern its members. The students are given an opportunity to study the members of the solar system, the moon, star clusters, and nebulae, with the nine-inch equatorial in the Newton Observatory. Course II. is practical, and it is intended primarily for engineering students.

COURSE I.—Elements of Descriptive Astronomy. A study of the earth and its relation to the other members of the solar system; the laws which govern the phenomena of the solar system; and a general descriptive outline of the heavenly bodies.

First term, three hours.

COURSE II.—Field Astronomy. Determination of time, latitude, and longitude, by the transit, sextant and chronome-

ter. Open to those who have completed Trigonometry, Astronomy I., and the first term of Physics I.

Second term, two hours.

COURSE III.—Advanced Descriptive Astronomy. A more detailed and advanced study of the topics presented under Course I. Open to students who have completed Astronomy I.

Second term, three hours.

COURSE IV.—History of Astronomy. A course tracing the progress of the science from early times, including the work of the celebrated pioneers, down to the present day. Open to students who have completed Course I.

Second term, two hours.

COURSE V.—Spherical and Practical Astronomy. For advanced students. The theory of observation and instruments. The theory and practice of determination of time, latitude, and longitude. Eclipses and occultations. Double star observations. Positions of planets and comets with the nine-inch equatorial. Open to students who have completed Mathematics II., Physics I., and Astronomy I., and may be begun either the first or second term.

Throughout the year, three to five hours.

BIOLOGY.

The courses in this department are designed to acquaint the student with the great world of life in its different forms, functions, and uses. Considerable attention is given to details in observation and to a comparative study of forms, thereby training the student to observe accurately and to think clearly and logically. The economic aspects of the subject are considered with the view of presenting some of the great problems in the applied biological sciences.

A Biological Club exists for advanced students in which reviews of current biological literature or of research work of the student are presented.

COURSE I.—General Biology. This course aims to give the fundamentals of the science, considering life in its broadest aspects as illustrated in various types; the various laws governing form and function, and the general principles of organic evolution are considered. The first term is largely zoological in character, the second term botanical. The field work consists in the collection and identification of some group of animals or plants; in the laboratory a series of type forms is studied. Lectures and recitations two or three hours a week, laboratory and field work two and a half hours a week.

Throughout the year, four hours.

COURSE II.—Principles of Biology. A course which deals with evolution, natural selection, mutation, genetics, including Mendel's Law, inheritance of acquired characters and eugenics, and the physical basis of life and heredity as found in the cell. together with the general facts and theories of development. Lectures and assigned readings. Open to all college students above freshman rank.

Throughout the year, one hour.

COURSE III.—Advanced Botany. The external and internal morphology of a series of plants illustrating the various orders of the plant kingdom is studied. Special attention is given to the evolutionary side of the subject, and to the correlating of structure with function. Field work forms an important feature of the course. Lectures and recitations one hour a week, laboratory and field work four hours a week. Open to students who have completed Course I.

Throughout the year, three hours.

COURSE IV.—Advanced Zoology. The external and internal morphology of a series of animals illustrating the various classes is studied. The first term is devoted to the invertebrates, the second term to the vertebrates, including the dissection of various forms; the work of the first term is extensive, that of the second term intensive and largely comparative. Lectures and recitations two hours a week, laboratory work four hours a week. Open to students who have completed Course I.

Throughout the year, four hours.

COURSE V.—Economic Botany. The aim of this course is to give the student a knowledge of the history, distribution, and uses of the various economic plants, such as those furnishing foods, fibers, drugs, timbers, flowers, etc., as well as those causing disease. Lectures and recitations two hours a week; field and laboratory work two hours a week. Open to students who have completed Course I., or its equivalent.

First term, three hours.

COURSE VI.—Economic Zoology. A general course corresponding to Course V, but dealing with economic animals, including the study of economic insects. Lectures and recitations two hours a week; field and laboratory work two hours a week. Open to students who have completed Course I., or its equivalent.

Second term, three hours.

COURSE VII.—Bacteriology. The aim of this course is to acquaint the student with the general distribution and physiology of these important organisms and to show their important connection with human welfare. The laboratory work is designed to give the student training in bacteriological technique by growing and studying the morphology and physiology of some specific type forms. Lectures and recitations one hour a week; laboratory work four hours a week. Open to students who have completed Course I.

First term, three hours.

COURSE VIII.—Plant Physiology. A course which deals with the general subjects of photosynthesis, respiration, transpiration, growth, and irritability of plants; the relation of plants to the soil and to their environment is considered. The laboratory work is largely experimental. Lectures and recitations one hour a week; laboratory work four hours a week. Open to students who have completed Course I., and preferably Course III.

Second term, three hours.

COURSE IX.—Cytology and Histology. A course which treats of the structure of the cell and its various modifications

into tissues; the laboratory work is designed to give the student training in technique and consists in the fixing, imbedding, sectioning, staining, and mounting of various tissues, mostly from animals. Lectures and recitations one hour a week; laboratory work six hours a week. Open to students who have completed Course I., and preferably Course IV.

First term, four hours.

COURSE X.—Vertebrate Embryology. This course includes the study of the development of the frog and the chick from the one-celled stage until fully formed. The study of the various stages and the preparation of slides constitute the laboratory work. Lectures and recitations one hour a week; laboratory work six hours a week. Open to students who have completed Course IX.

Second term, four hours.

COURSE XI.—Biological Problems. This course is designed for advanced students who are desirous of pursuing some definite line of biological work not included in the above courses. Open to students only by permission of the head of the department.

Hours to be arranged.

CHEMISTRY.

The courses offered by this department are intended to have both a cultural and a technical value. The work has been organized as the result of an endeavor to acquaint the student with the general and special principles of the work, to familiarize the worker with accurate methods of experimentation, to develop the ability to observe critically and accurately, and make correct inferences, and finally, to provide suitable preliminary training for independent research work.

COURSE I.—General Inorganic Chemistry. This course concerns itself with the fundamental principles on which the science is based. The non-metals, metalloids and metals,

together with their more important compounds, are studied. Energy as a factor in chemical reactions receives special attention, as also do the elementary principles of chemical dynamics and statics. Stress is laid upon certain processes and various materials in their application to the commercial arts. Each student has a desk in the laboratory at which the required experiments are performed. More elaborate experiments to illustrate lectures are performed by the instructor. Text-books: Lee's Text-Book of Experimental Chemistry and Mellor's Modern Inorganic Chemistry. Lectures and recitations two or three hours a week. Laboratory work two to four hours a week.

Throughout the year, four hours.

COURSE II.—Analytical Chemistry.—Qualitative Analysis.—Bases and Acids. The student is required to work through a system of preliminary analytic reactions. The more intimate knowledge of the elements and their compounds thus gained enables the student to verify the methods of grouping and separating the elements. At stated intervals, lectures and recitations will be devoted to discussions of all reactions. The modern theories of "solution," "precipitation," "chemical equilibrium," etc., receive much attention. Students are required at the conclusion of the work to analyze a given number of unknown substances without reference to the manual. This course includes a brief course in Spectrum Analysis. Laboratory and lectures six hours a week throughout the year. Open to those who have completed Course I., or its equivalent.

Throughout the year, four hours.

COURSE III.—Analytical Chemistry.—Quantitative Analysis. The aim of this course is to provide a thorough knowledge of the principles of gravimetric and volumetric analysis as applied to the separation and determination of the common bases and acids found in salts, minerals, ores, etc. It is of special value as a training in the more refined methods of manipulation. Each student is required to calibrate a set of weights and all volumetric apparatus. The ability to make a quantitative analysis of an unknown substance is the final requirement.

Electro-Chemical Analysis.—A brief course in electrolytic methods of analysis is included in this course.

Laboratory work, eight hours per week. All laboratory work is supplemented by lectures. Open to those who have completed Course II., or its equivalent.

Throughout the year, four hours.

COURSE IV.—Gas Analysis. This course is offered because of the analyst's frequent need of this kind of training. It deals with the density of gases, with the volumetric and barometric methods of determining the composition of various gases, and with many modern practical applications of gasometric apparatus. Lectures and laboratory work four hours a week.

Throughout the year, two hours.

COURSE V.—Organic Chemistry. The work of this course begins with an historical sketch of the development of organic chemistry, and a consideration of such topics as, the nature of carbon, homology, isomerism, stero-isomerism, types of formulae, nomenclature, and classification of organic compounds. The compounds of the *aliphatic* and *aromatic* series are then studied in detail. Those compounds and processes which are of technical or theoretical importance receive special attention. This course is recommended to those students who contemplate the study of medicine or other phases of chemico-biological work, or chemical engineering. Course VI. should be taken in conjunction with this course. Open to students who have completed Course II.

Throughout the year, three hours.

COURSE VI.—Organic Preparations, Reactions, and Analysis. This is a laboratory course involving methods for the preparation and purification, and the analysis of a number of typical organic compounds. The physical and reaction properties, and relationships of these compounds are then studied in detail. In the prosecution of this work the student becomes familiar with the apparatus and operations involved in the work of practical organic chemistry, such as crystallization,

determination of melting and boiling points, fractional distillation, steam distillation, extraction, drying, determinations of molecular weights; and with the general methods of preparation, such as etherifications, oxidation and reduction, saponification, nitration, sulphonation, diazotization, etc. The work in organic analysis includes in addition to the usual qualitative tests, quantitative determinations of carbon, hydrogen, nitrogen and the halogens. Laboratory work, six hours per week. Open to those who have completed or are taking Course V.

Throughout the year, three hours.

COURSE VII.—Sanitary Analysis and Bacteriological Chemistry. The purpose of this course is to familiarize the student with the standard methods of making physical, chemical, and bacteriological examinations of air, water, milk, sewage, etc. Although attention will be given to the study of the growth and development of bacteria, and the methods of cultivating and recognizing them, stress will be placed upon the chemical changes effected by these organisms. This course is recommended to those who contemplate pursuing sanitary work. Opportunity is provided for practical as well as research work along this line.

Throughout the year, three hours.

COURSE VIII.—Advanced Analytical Chemistry. Technical Analysis. This course offers opportunity for advanced students to study methods of analysis along special lines. It is designed to familiarize the individual with many of the analytical methods in use in commercial laboratories. Three lines of work are open to the student: (a) the analysis of those substances which are inorganic in their nature, such as iron and steel, alloys, silicates and sulphides, ores, cements, coke and coal, and water; (b) the analysis of those substances essentially organic in nature, as foods, and the detection of adulterants; (c) Agricultural Chemistry, which includes analysis of soils, fertilizers, dairy products, etc.

Special courses in **Biological Chemistry** and **Toxicological Analysis** are offered to students preparing for the profession of chemistry or the study of medicine.

Throughout the year, hours elective.

COURSE IX.—Physical Chemistry. This course aims to give the student a general knowledge of the principles of the subject by means of lectures, reading and laboratory work. This latter work will include the determination of "the heat of neutralization," "heat of solution," "speed of reaction," solubilities, molecular weights, conductives, refractive indices, and an experimental study of various other physical and chemical constants. Six hours per week.

Throughout the year, three hours.

COURSE X.—History and Development of Chemical Theory. This course endeavors to trace the development of chemistry from its earliest origins to the present time, by a study of the lives and influence of the men who have contributed to this phase of science. Lectures, collateral readings, and preparation of theses. Open to students who have completed Course I.

Throughout the year, two hours.

COURSE XI.—Industrial Chemistry. The work of this course has been outlined to meet the wants of those students who are particularly interested in the application of chemical processes to the commercial arts.

Throughout the year, three hours.

ECONOMICS.

This department is open to those who have completed one year in History or Political Science.

Particular attention is given to the study of the development of economic life and institutions, American conditions being specifically analyzed. Students are made familiar with the accepted principles of the science and are given a practical acquaintance with the complex modern economic organization. Encouragement is also offered to individual research, leading to possible future specialization. Lectures, papers, and

comparative examination of various authorities constitute the method of instruction.

COURSE I.—Principles of Economics. Introducing a survey of industrial history, production and distribution, compassing the accepted elements of the science. The text used is Seager's Economics, and required readings are assigned in the leading modern authorities.

First term, three hours.

COURSE II.—Applied Economics. This is a continuation of Course I. and is a detailed examination of the economic principles applied in trusts, labor, tariff, taxation, finance, and social conditions of today. Lectures, conferences, papers, and individual investigations are the methods of instruction.

Second term, three hours.

COURSE III.—Money and Banking. A survey of financial history and thought through modern times in various nations, with an intensive study of the theories, practice and legislation of the United States. Scott's Money and Banking is the outline text of the course.

First term, two hours.

COURSE IV.—Economic Theories. History of the development of economic thought, including a study of the leading principles of the science as propounded in Adam Smith, Ricardo, Mill, Senior, Menger, Wieser, Böhm-Bawerk, Walker. and Clark. The seminar method is used. Open to a limited number of those who have completed Courses I. and II.

Second term, two hours.

EDUCATION.

Through the generosity of Mr. Truman D. Collins, provision has been made for the endowment of a Chair of Philosophy and Education. The funds are not immediately available, but arrangements have been made whereby a sufficient amount of work will be offered in

Education to satisfy the requirements of the new educational code of Pennsylvania.

ENGLISH BIBLE.

The work in this department is intended to open to the student the rich stores of literature contained in the Bible; to familiarize him with the history of the Hebrew people, their civilization, and their influence on the world; and to lead to the critical study of the spirit and form of Hebrew literature as it is shown in the English version. The English Bible is studied as a great monument of our literature and as the source of our knowledge of one of the great civilizations of the world. The courses do not touch questions of doctrine or belief.

COURSE I.—A General Introduction to the English Bible. A brief sketch of the history of the Hebrew and Greek Bibles is offered and the evolution of the English Bible traced in detail and illustrated by rare original copies of the early translations. The course includes the history of the Hebrew people as told by their own chroniclers. A general survey of the different types of literature to be found in the Old and New Testaments will be given, especial attention being directed to the picturesque biography and to the historical crises which vitally affected the development of the nation. In connection with this the geography of the Holy Land and the chronology of the historic and prophetic eras will be studied. The student will be constantly reminded of the influence of Bible thought and phrase upon modern literature. Moulton's Modern Reader's Bible will be used as text-book, but much of this course will be given in lectures which each student is required to keep in carefully written note-books which at intervals will be examined by the instructor in English.

Throughout the year, one hour.

COURSE II.—New Testament History and Literature. Stress

is here laid on the importance of understanding the political and religious background of the life and thought embodied in the New Testament. To this end the Maccabean and Roman periods of Jewish history are carefully studied. The new light thrown upon the "Land and the Book" from recent explorations will be examined, and the social and industrial condition of the world in the times of Jesus and St. Paul noted. The relation of the Christian religion to the Old Testament religion and to the Greek and Persian mysteries will be traced. The Gospels and the Acts will be studied both from the historical and literary standpoints and the development of church life and thought will be carefully examined. The Epistolary and Apocalyptic literature will be studied in the order of its development and with constant reference to the new discoveries of contemporaneous documents. Open to those who have taken Course I.

Throughout the year, two hours.

Given in 1915-16.

COURSE III.—Old Testament History and Literature. The method here pursued is similar to that in the preceding course. The history of Palestine from the earliest times down to 165 B. C. is studied in connection with the life and development of the Hebrew people. The international connections with Egypt, Phœnicia, Syria, Assyria and Babylon are briefly traced and the political, social and religious influence noted. The marked eras of the nation's growth are sharply defined from the Conquest to the Exile and the later origin of Judaism explained. The Old Testament literature is taken up in the order of its historic development and its relation to the life, thought and external history of the Israelites is brought out. The principles governing the proper interpretation of all Oriental writings are defined and applied to the early Bible narratives. The relations of the Bible to science are here examined. The literature of the Old Testament, taken up chronologically, is compared with contemporaneous writings. The latest results of Archæology are made available. Particular attention is given to the origin, growth and character of the legal and wisdom literature and to the theology of the Prophets. A few of the

greatest masterpieces, such as Job, Ecclesiastes, etc., are studied in detail.

Throughout the year, three hours.

Given in 1914-15.

ENGLISH LANGUAGE AND LITERATURE.

The aim of this department is to fit the student to use the English language as an instrument for the easy, idiomatic, and energetic expression of his thought; to train him, both by theory and by practice, for natural and effective public address; to acquaint him with the essential facts in the development of the English language and literature, and with the great authors who have created that literature; and to render him sensitive to the literary and aesthetic values of life. Rigorous and painstaking habits of scholarship are constantly inculcated; but the student is never allowed to forget that literature is vital—that it draws its subject-matter and its inspiration from life, and in turn transmutes the crude and imperfect forms of life into beauty and character.

COURSE I.—Lectures on the Elements of Rhetoric; Compositions; and Selected Readings in English Literature. This course aims to acquaint the student with the principles and the practice of the art of rhetoric, and to stimulate in him a desire for good literature. It is believed that successful instruction in rhetoric depends more upon example and practice than upon precept. With this in mind, examples of the best literature are kept continually before the student. He is encouraged to write freely upon subjects that are familiar to him, and that spring naturally from the interests and the activities of his daily life. The instructors correct each paper in detail, and make appointments with each student for private consultation or for practice work in small groups. The instruction is made extremely flexible, and freshness and variety of method are constantly sought. *Throughout the year, three hours.*

COURSE II.—Introduction to English Literature. 1. An outline history of the development of English literature. 2. Collateral reading. 3. The study and interpretation in class of Shakspere's Macbeth, Milton's Minor Poems, and Selections from Pope.

Elective for all students who have completed Course I., and required of all who desire to do advanced work in English.

Throughout the year, two hours.

COURSE III.—English Poetry from 1789 to 1832. Copious readings from the poetry of Burns, Wordsworth, Scott, Byron, Shelley and Keats. The constant aim is to arouse in the mind of the student an intelligent enthusiasm for the great poetry of the period; and, while holding him to accurate and diligent scholarship, to show him how life and literature interpenetrate.

Elective for all students who have completed Course II.

Throughout the year, three hours.

Given in 1915-16.

COURSE IV.—The Victorian Period of English Literature. Landor, Carlyle, Tennyson, Arnold, Ruskin, and Browning. Conducted in the same manner as is Course III., with which it alternates.

Elective for all students who have completed Course II.

Throughout the year, three hours.

Given in 1914-15.

COURSE V.—American Literature. Outlines of its development. Lectures upon representative authors. The critical study and interpretation of masterpieces. Appreciations and essays by members of the class.

Elective for all students who have completed Course III. or Course IV., and to a limited number who have completed Course II.

First term, two hours.

Given in 1914-15.

COURSE VI.—Elements of Literary Criticism. Winchester's Principles of Literary Criticism. A systematic inquiry into the essential elements of literature, and a detailed consider-

ation of the various forms of literature. A considerable amount of illustrative reading is expected, and the student is required to test two or three classic productions by a practical application of the principles of criticism.

Elective under the same conditions as Course V.

Second term, two hours.

Given in 1914-15.

COURSE VII.—Shakspere. Analytic and interpretative studies of five plays of Shakspere: As You Like It, Othello, King Lear, Antony and Cleopatra, The Tempest. A careful reading of Dowden's Shakspere Primer is required in connection with this course.

Elective under the same conditions as Course V.

First term, two hours.

Given in 1915-16.

COURSE VIII.—Prose Fiction. Bliss Perry's A Study of Prose Fiction. The novel, the romance, and the short story. Studies in the structure and the significance of these popular forms of modern English fiction. Illustrative readings and carefully prepared papers.

Elective under the same conditions as Course V., except that the class must be kept within small limits, and that advanced students who have shown special talent as writers will be given preference.

Second term, two hours.

Given in 1915-16.

COURSE IX.—Anglo-Saxon. Old English Grammar. Reading of prose and a few poetical selections from Bright's Anglo-Saxon Reader.

Elective for all students who have completed Course II.

First term, three hours.

COURSE X.—Chaucer. Middle English forms and syntax. The Canterbury Tales and Minor poems.

Elective for all students who have completed Course II.

Second term, three hours.

Given in 1915-16.

COURSE XI.—Old and Middle English Poetry, not including Chaucer. The most important selections will be read, in translation when necessary. The literary history of the period will also be studied.

Elective for all students who have completed Course II.

Second term, three hours.

Given in 1914-15.

FRENCH LANGUAGE AND LITERATURE.

It is the aim of the courses in this subject to give to the student: (1) an accurate knowledge of the language of the present time both as written and spoken; (2) an appreciation of the more important masterpieces of the literature proportionate to the knowledge of the language; and (3) a knowledge of the historical development of the literature.

The work as above outlined is carried on by means of recitations, the writing of prose and essays, the hearing of lectures in French, and by collateral readings. Much stress is laid from the beginning upon the ability of the student to express himself directly in the language. With this end in view the work of the class room is conducted in French and phonetic methods are employed in order to give accuracy of pronunciation.

COURSE I.—Elementary French. Fraser and Squair's Grammar is used as a reference book. Oral and written exercises. Dictation. Reading of easy prose.

Throughout the year, four hours.

COURSE II.—Intermediate French. Reading of such authors as George Sand, Mérimée, Daudet, Augier, Dumas, etc. Memorizing of selected poems. In this course brief outlines of the history of literature are also given with collateral readings from celebrated authors.

Throughout the year, four hours.

COURSE III.—French Literature in the Seventeenth Century. A study of the drama and of the miscellaneous literature of the period. Corneille, Racine, Molière, La Fontaine, La Bruyère, Pascal, Bossuet, Fenelon, Mme. de Sévigné, Mme. de La Fayette.

Throughout the year, three hours.

Given in 1915-16.

COURSE IV.—French Literature in the Eighteenth Century. This course will treat of the time and influence of Voltaire, Montesquieu, Rousseau, the Encyclopedists, Beaumarchais, Lesage, Marivaux, André Chénier.

Throughout the year, three hours.

Given in 1914-15.

COURSE V.—French Literature in the Nineteenth Century. A study of the principal authors of this period. Chateaubriand, Lamartine, Victor Hugo, Alfred de Vigny, Alfred de Musset, Théophile Gautier, Leconte de Lisle, Sainte-Beuve, Balzac, with a brief survey of contemporary writers.

Throughout the year, three hours.

Given in 1914-15.

COURSE VI.—French Literature before the Seventeenth Century. A study of the history of old French literature, which will include reading of extracts from the Chanson de Roland, etc. The writers of the latter part of this period will also be studied.

Throughout the year, three hours.

Given in 1915-16.

COURSE VII.—French Prose Composition.

Throughout the year, one hour.

GEOLOGY.

The courses in Geology are eminently general culture courses, explaining as they do so many common phenomena and leading the student to take a greater interest in natural objects. The class work is

supplemented by practical work in the field, museum, and laboratory.

COURSE I.—Physiography of the Land and Elementary Meteorology. Laboratory work in the study of topographic and weather maps will be supplemented by several short excursions. Recitations three hours a week and laboratory two hours.

Second term, four hours.

COURSE II.—General Geology. This course is planned to give a comprehensive view of the elements of geology, and it includes physiographic, structural, dynamic, historical, and economic geology. The historical part deals largely with North America. The economic part treats of coal, oil, gas, building stones, clay, cements, abrasives, underground waters, precious stones, and the ores of iron, copper, lead, zinc, gold, and silver. In the laboratory a study is made of the common rock-forming and important ore-forming minerals, the classification and identification of rocks, topographic and geologic maps and folios, and fossils typical of the various geologic periods.

Open to those who have completed the freshman year. Recitations, three hours a week; laboratory or field work, two hours a week.

Throughout the year, four hours.

COURSE III.—Mineralogy. Crystallography, blowpipe analysis, and determinative mineralogy. A minor part of the work in the laboratory deals with crystal forms and crystal models, and a major part with the study of about one hundred and fifty minerals by means of the blowpipe and by simple chemical and easily applied physical tests.

Open to those who have had a year in chemistry. Recitation, one hour a week; laboratory work, four hours a week.

First term, three hours.

GERMAN LANGUAGE AND LITERATURE.

The methods employed in the first two years of this study are intended to establish a broad and thor-

ough foundation for an appreciative study of German literature in the advanced courses. Accuracy and intelligent pronunciation is insisted upon; and the principles of phonetics are represented in simple form and are put to practical use in the reading exercises in the class room. In prose composition more attention is given to reproductive exercises and theme-writing than to translations. The oral use of the German language in the class room will be constantly increased until the recitations are conducted entirely in German.

A German Conversation Club, in which a special opportunity for linguistic practice is afforded, has been founded among the students of the College. Membership is open to those who have taken Course II. or its equivalent.

COURSE I.—Elementary German. Walter & Krause's Beginning German. Such reading as the following: Storm's Immensee, Baumbach's Im Zwielicht, Heyse's L'Arrabbiata, Goebel's Hermann der Cherusker, Wildenbruch's Neid, Schiller's Wilhelm Tell. Oral exercises based on the Gouin Series and oral and written reproduction of portions of the text read. The aim of this course is to enable the student to read and understand accurately German prose of ordinary difficulty and to acquire some proficiency in writing and speaking German.

This course represents from five to six terms of ordinary high school work, but may not be taken to remove language requirements for admission to college.

Throughout the year, four hours.

COURSE II.—Intermediate German. Reading of modern prose, modern comedy, and classical drama. One hour a week throughout the year will be devoted to prose composition, reproduction of texts in German, and short themes in German.

Open to all students who have credit for Course I., or who present two years of German for admission to college.

Throughout the year, four hours.

COURSE III.—Introduction to Eighteenth Century Classics. Lessing, Goethe and Schiller. Two dramas of each are read in the order named and at least one work of each is critically analyzed. Monthly themes in German and a semestral essay in English. Collateral reading: Robertson's History of German Literature,—chapters on the above poets. Alternates with Course IV.

Throughout the year, three hours.

Given in 1914-15.

COURSE IV.—German Novel and Short Story. Rapid reading of one of more works of H. von Kleist, Eichendorf, Hauff, Hoffman, Stifter, Ludwig, Freytag, C. F. Meyer, Keller, Storm, Heyse, Fontane, Wildenbruch, Sudermann, and Rosseger. A part of this reading is done outside the class and is made part of written themes in German. Collateral reading: Robertson's History of German Literature, chapters on the authors read in class. Alternates with Course III.

Throughout the year, three hours.

Given in 1915-16.

COURSE V.—German Conversation and Composition. The aim of this course is to train the student in colloquial German in speech and writing. Selections from modern authors are read to the class and reproduced from memory, and themes are written weekly on assigned subjects. The conversation is based on Kron's Daily Life and Vos' Materials for German Conversation. Given in conjunction with Course III. This course, conducted in German, is especially intended for those who look forward to teaching of German.

Throughout the year, one hour.

COURSE VI.—Goethe's Life and Work. First Term. Reading of works illustrating different periods of Goethe's literary development, such as Götz von Berlichingen, Egmont, Torquato Tasso, and selections from Dichtung und Wahrheit. Collateral reading from Bielschowsky's Goethe.

Second Term. Goethe's Faust. Interpretation of the drama and discussion of its philosophic and ethical ideas.

In this course a considerable amount of collateral reading will be required. Alternates with Course VII.

Throughout the year, two hours.

Given in 1914-15.

COURSE VII.—Nineteenth Century Drama. Kleist, Grillparzer, Hebbel, Ludwig, Gutzkow, Wagner, Hauptmann, Sudermann. Rapid reading of representative play of each. Short themes in German on the reading matter. Collateral reading: Robertson's History of German Literature; chapters on the authors read in class. Alternates with Course VI.

Throughout the year, two hours.

Given in 1915-16.

COURSE VIII.—German Literature. A systematic study of German literature from the earliest times, with special emphasis on the Classic Periods of the Twelfth and Eighteenth Centuries. Lectures in German, reports and readings. Collateral reading: Thomas' Anthology of German Literature, Wenckebach's Meisterwerke Des Mittelalters, Woerner's Niebelungenlied, Schiller's Braut von Messina and Don Carlos, and Goethe's Faust. Alternates with Courses IX. and X.

Throughout the year, two hours.

Given in 1915-16.

COURSE IX.—History of the German Language. A general survey of the historical development of the German language, with discussions of such linguistic problems as bear relation to current usage. Text-book: Behagel's Die Deutsche Sprache. Recitations and lectures. This course is especially intended for those preparing to teach German.

First term, two hours.

Given in 1914-15.

COURSE X.—Middle High German. Study of the dialect in its relation to modern High German, and readings from Hartmann von Aue's Der arme Heinrich, das Niebelungenlied, and Walter von der Vogelweide's lyrics.

Second term, two hours.

Given in 1914-15.

COURSE XI.—Scientific German. This course has been specially arranged for the student of science who is interested mainly in a reading knowledge of German. Open to students who have completed Course II.

Throughout the year, two hours.

GREEK LANGUAGE AND LITERATURE.

The aim of the department is to lead the students to the acquisition of a living knowledge of the Greek language as an introduction to a practical acquaintance with Greek life and thought. It is believed that by careful and accurate work in the first years of the language the student can gain such knowledge as will enable him to read widely and independently. The courses laid down are such as are thought to be best adapted to that end. The work is varied, and an attempt is made to give a view of all departments of the literature. The department possesses a growing collection of casts of antique sculpture, painted vases and other antiquities, about a thousand photographs, and several hundred lantern slides.

Students entering College without Greek are given opportunity to prepare to enter Greek I. with a minimum loss of time.

GREEK A.—Elementary Greek. This is a course intended to prepare students to enter Greek I. after a year of careful work. The first term is devoted to some such book as Benner and Smyth's First Greek Book, the second term to selections from Xenophon and other Attic authors. Students of some maturity and reasonably well grounded in Latin will be prepared in one year to do the work in Greek I. with profit.

Only in exceptional cases will this course, without further work in the subject, be counted for a degree.

Throughout the year, five hours.

COURSE I.—Homer, The Iliad or the Odyssey. Detailed

study of two or three books and rapid reading of as much more as the time allows. This rapid reading of the Homeric poems as literature is made the basis of the study of early Greek life and civilization.

Greek Composition.—Passages from classic authors are carefully read in class. A weekly exercise in composition is based on the Greek text read. The aim is to develop a vocabulary and an accurate knowledge of Greek syntax. Impromptu writing of Greek is emphasized.

Throughout the year, four hours.

COURSE II.—Lysias. Selected orations. A detailed study is made of the history of Athens in the age of Pericles and of the Peloponnesian War as an introduction to this part of the work.

Plato.—The Apology and Crito and selections from the Phaedo. Outline of history of Greek philosophy.

This course is made the basis of the study of historical Greek life and civilization.

Throughout the year, three hours.

COURSE III. A.—Greek Drama. Detailed study of two plays and rapid reading of several others. Usually the following will be read: Aeschylus' Agamemmon, Sophocles' Oedipus Tyrannus, Euripides' Iphigeneia in Tauris and Aristophanes' The Frogs. Individual investigation of special topics. The course is made not only a study of the origin and development of the Greek Drama, but also a study in literary evolution.

Throughout the year, three hours.

COURSE III. B.—Greek Oratory. Andocides, Isocrates, Demosthenes. The history and politics and the public and private antiquities of the times. Lectures and assigned readings.

Throughout the year, three hours.

One of these courses is given each year. Open to all who have completed Course II.

COURSE IV. A.—Classical Archaeology. Egyptian, Baby-

Ionian, and Assyrian Art. Mycenaean Civilization. Greek Vase Painting. Greek Architecture.

Throughout the year, two hours.

Given in 1914-15.

COURSE IV. B.—Classical Archaeology. Greek Sculpture.

Throughout the year, two hours.

Given in 1915-16.

Courses IV. A. and IV. B. are given in alternate years. The instruction is mainly by lectures, but text-books are used and a large amount of collateral reading is required. The courses are open to those who have completed Course I., and under some limitation may be elected by students having no knowledge of Greek.

COURSE V.—Greek Testament. A minute and critical study of a portion of the New Testament to insure a familiar and accurate knowledge of vocabulary, syntax, and idioms, followed by more rapid reading to develop ease and rapidity in grasping the thought of the original. The purpose of the course is to lay the foundation for exegetical work. Open to all who have completed Course II.

Throughout the year, two hours.

Given in 1914-15.

COURSE VI.—Greek Literature. A careful survey of the field from Homer to the Roman period. One hour a week is devoted to lectures and text-book work, one hour is given to critical readings in English translations, and two hours to readings in Greek. Open to all who have completed Course II.

Throughout the year, four hours.

COURSE VII.—Greek Literature in English. The course consists of the lectures, text-book work, and English readings of Course VI. It may be elected by students having no knowledge of Greek.

This course is required of all students electing Greek as their major subject.

Throughout the year, two hours.

HEBREW.

COURSE I.—Davidson's Hebrew Grammar, completed. Twelve or more chapters in Genesis read.

Throughout the year, four hours.

This course is given in alternate years if called for.

HISTORY.

The aim of the department is to give that knowledge of the facts and philosophy of history which belongs to a liberal education. The subjects in periods and countries are planned also to train for university work or to equip for preparation to enter law or journalism. The evolution of European civilization from its sources and the growth and influence of Anglo-Saxon institutions are the general theme of the work. History is presented as a real educative process. The department has the appropriate library authorities for the several courses, and source materials are freely used. Abstracts, maps, essays, and outlines are required in the class room. The method of instruction is a combination of lectures and textbook. Course I. is required for admission to the succeeding courses.

COURSE I.—European History. The period covered extends from the Teutonic migration to the French Revolution. The first term is given to mediaeval institutions and the transition to modern Europe. Thatcher and Schwill is the text for class guidance, with Robinson's European Readings and assignments in standard authorities. The second term is occupied with the growth of nationalities and the religions and political struggles for balance of power. The Oxford series of Periods of History are the texts. One hour of lecture each week, with two hours of quiz and reports.

Throughout the year, three hours.

COURSE II.—The Renaissance and the Reformation. The first term is devoted mainly to the Renaissance in Italy and subordinately in England. The political, intellectual, literary and aesthetic phases of the movement are studied. Burckhardt and Symonds are the authorities used, with Einstein for the English Renaissance. The second term is occupied with the Reformation from Wycliffe to the Peace of Westphalia. The texts are Hausser and Fisher.

This course alternates with Course III.

Throughout the year, three hours.

Given in 1915-16.

COURSE III.—French Revolution and Nineteenth Century. A lecture course with reference study in several authorities. The first term examines the causes and the progress of the Revolution and concludes with the Napoleonic Era. The second term covers Europe after the Congress of Vienna, tracing the formation of the German and the Italian unity and the continental triumph of liberalism. Hazen's Europe is used as an outline of the work.

Throughout the year, three hours.

Given in 1914-15.

COURSE IV.—History of England. The work extends from the Teutonic origins to the Nineteenth Century. Lectures, collateral readings, and text-books. Gardiner's Student's History and Green's Short History of the English People furnish the outline; and references are required in the constitutional histories of Stubbs, Maitland, and Taswell-Langmead and in the works of Froude, Gardiner, and Lecky. This course alternates with Course V.

Throughout the year, two hours.

Given in 1914-15.

COURSE V.—The Political and Constitutional History of the United States, from 1781 to 1877. The sources are extensively used as found in the government publications, the writings and addresses of statesmen, and the contemporary interpretation of national affairs. Lectures, and reports by students on assigned

readings in Schouler, Henry Adams, McMaster, Gordy, Rhodes and the American Nation Series. Monographs required of the class each term.

Throughout the year, two hours.

Given in 1915-16.

ITALIAN LANGUAGE AND LITERATURE.

COURSE I.—Elementary Italian. Italian Grammar, Grandgent. Oral and written exercises. Dictation. Texts such as De Amicis, Cuore; Goldoni, Il vero Amico; Manzoni, I Promessi Sposi.

Throughout the year, three hours.

Given in 1915-16.

COURSE II.—Literature in the Thirteenth and Fourteenth Centuries. Dante, La Divina Commedia; Petrarca, Rime Scelte, etc.

Throughout the year, two hours.

Given in 1914-15.

LATIN LANGUAGE AND LITERATURE.

The courses in the Latin department are intended to direct the student to a systematic study of the language and its development, to acquaint him through a varied reading of the best authors with the leading features of the literature, and to make him familiar with the main facts of Roman history, life, and civilization. Technical grammar and composition are studied only in so far as they contribute to the comprehension of the language. The department is well equipped with books, maps, and facsimiles of inscriptions and has a good collection of photographs, lantern slides, and antiquities for illustrative purposes.

The instruction is given by means of recitations, supplemented by lectures and, in the advanced courses, by individual work.

COURSE I.—Erasmus, selected Colloquia.

Cicero, De Senectute or De Amicitia.

Livy, Books XXI.-XXII., or selections from Books I.-XXV.

Weekly exercises in Prose Composition.

This course includes a detailed review of Latin case structure and syntax, and a specific effort is made to teach right habits of reading and translation.

Throughout the year, four hours.

COURSE II.—Horace, selected Odes and Satires.

The more common metrical structures are studied so that the Latin can be read with ease. Especial attention is directed to Horace's life and philosophy and to as much of the history and customs of the period as sheds light on the subject matter.

Roman Comedy. Selections from the comedies of Terence or Plautus.

Throughout the year, three hours.

COURSE III. A.—Roman History. A brief introductory course of lectures on the history of Rome from the beginning to the Civil War period. Extensive readings in English, covering the same period. The Civil War and the Early Empire will be studied more intensively in connection with readings in Latin from Cicero's Letters and Tacitus' Annals. Reports and assigned readings in Mommsen, Heitland, Ferrero, Merivale, and the standard biographies.

Throughout the year, three hours.

B.—Martial, selected Epigrams.

Quintilian, Institutions X. Lectures and discussions on Roman literary forms.

Throughout the year, three hours.

One of these courses alternates with Course IV. Open to all who have completed Course II.

Given in 1915-16.

COURSE IV.—Roman Private Life. Lectures and reports on

Roman private life with readings mainly from the Letters of Pliny.

This course alternates with Coure III. Open to all who have completed Course II.

Throughout the year, two hours.

Given in 1914-15.

COURSE V.—Roman Topography. Lectures and reports on topography, architecture, monuments, and history of Rome.

May be elected without previous preparation in Latin.

Throughout the year, two hours.

Given in 1915-16.

COURSE VI.—Advanced Latin Composition. Practice in writing prose, with careful study of syntax and idiom. Individual work designed primarily for those who look forward to teaching or to graduate work. One hour class work and one private conference weekly.

Throughout the year, two hours.

Given in 1914-15.

NOTE.—For students entering college without complete preparation in Latin, instruction will be provided in such secondary Latin as may be required to satisfy entrance conditions.

MATHEMATICS.

The elementary courses in mathematics are: college algebra, plane and spherical trigonometry, analytic geometry including conic sections, and differential and integral calculus. These courses may be taken in the freshman and sophomore years. They mark the minimum attainments that a teacher of mathematics in a high school or an academy should possess.

COURSE I.—Algebra. This is a continuation of the algebra required for entrance. Much attention is given to graphical representation of linear and quadratic equations, and the following topics are considered: mathematical induction and the

binomial theorem for positive integral exponents, logarithms, undetermined coefficients, permutations and combinations, the theory of equations and an elementary treatment of determinants.

Trigonometry. The elements of trigonometry on the plane and on the sphere.

Throughout the year, four hours.

COURSE I. C.—Solid Geometry.

First term, three hours.

COURSE II.—Analytic Geometry and Calculus. An elementary treatment of the fundamentals of analytic geometry, of two and three dimensions, designed to equip the student for work in calculus. This course includes a complete elementary course in differential and integral calculus and while it satisfies the requiremements in mathematics for B. S. students, it will be adapted to those who are fitting themselves to teach mathematics in secondary schools.

Throughout the year, four hours.

COURSE III.—Advanced Calculus. This course is a continuation of Course II. It should be taken by those who intend to pursue advanced work or are looking forward to work in applied mathematics.

First term, three hours.

COURSE IV.—Differential Equations. An elementary treatment of differential equations, with applications to physics and mechanics. This course is necessary to a well-rounded course in mathematics.

Second term, three hours.

COURSE V.—Projective Geometry. Lectures, supplemented by reading. Reference books: Reye, Geometrie der Lage; Scott, Modern Geometry; Cremona, Projective Geometry.

Higher Plane Curves. The general properties of curves, the

resolution of singularities, and forms of curves of the third and fourth orders.

Throughout the year, three hours.

Given in 1915-16.

COURSE VI.—Functions of a Complex Variable. A general introduction to the theory of functions of a complex variable, following the methods of Weierstrass and Riemann.

Throughout the year, two hours.

Given in 1914-15.

PHILOSOPHY.

The aim of this department is to acquaint the student with the chief philosophic theories of the past and present, to cultivate in him the habit of critical and independent thought, and to set forth a consistent and satisfactory method of dealing with the fundamental problems of speculation.

COURSE I.—Psychology. A general introduction to the subject. A text-book is used, which is supplemented by informal lectures, assigned readings, and papers on special topics.

First term, three hours.

COURSE II.—Ethics. A brief survey of the history of ethical thought is followed by an examination of the chief ethical systems of modern times, with a view of arriving at the really valid principles which underlie human conduct. These principles are then applied to the various institutions and natural relations of human life. A text-book is used, supplemented by informal lectures. Open to those who have taken Course I.

Second term, three hours.

COURSE III.—Logic. This course aims to give the student a thorough knowledge of the fundamental laws and forms of thought. The principles governing immediate and mediate reasoning will be explained and the leading types of deduction and induction will be studied. A text-book will be used, sup-

plemented by lectures, and the student will be drilled in the different figures of the syllogism and in the detection of fallacies. Practical exercises will constitute a large part of the work demanded.

First term, three hours.

COURSE IV.—Metaphysics. This applies the conclusions reached in the preceding course to the questions relating to reality. Our chief metaphysical ideas are examined and an attempt is made to fix their meaning. These results are then applied to the construction of a consistent and valid theory of the nature of the material world and of the human soul. Open to all who have taken Courses I. and III.

Second term, three hours.

COURSE V.—History of Philosophy. A study of the chief philosophers and philosophic systems of ancient and modern times. A text-book will be used. Open to all who are taking or have taken Course I.

First term, two hours.

Given in 1914-15.

COURSE VI.—Theism. The true basis of knowledge is inquired into, the traditional arguments for the existence of God are critically examined, and the attempt is made to show that the theistic conception of the world is a necessary postulate of reason and of human life as a whole. Open to all who have taken Courses I. and V.

Second term, two hours.

Given in 1914-15.

COURSE VII.—Philosophy of Religion. This will be chiefly a lecture and reference course in which much reading and independent work will be expected on the part of the student. It will be introduced by a discussion of the religious data of thought and knowledge, the relation between metaphysics and theology, the true nature of religion and the trustworthiness of the religious consciousness. It will embrace the comparative study of the various nature, culture and prophetic Religions, thus critically studying religion in its historic phe-

nomena. It will include a consideration of the absolute religion.

Open to those who have taken Courses I. and II., or III.

Second term, three hours.

Given in 1915-16.

PHYSICS.

This department comprises courses in theoretical and practical physics.

The aim of the instruction is to give the student a thorough knowledge of the principles and laws that govern physical phenomena, and to acquaint him with the actual operations of these principles and laws. The work is presented to the student by lectures, with experimental demonstrations, combined with recitations, and the solution of problems. In the practical work, the student performs such experiments in the laboratory as will give him a practical knowledge of the principles and laws of physics.

The first courses are elementary and intended primarily for general culture. The remaining courses are designed for those more especially interested in science, those who expect to teach the subject, or those who are planning to pursue engineering.

Course I.—College Physics. Mechanics, Sound, Heat, Light, Magnetism, and Electricity. A general course in which the laws and phenomena of physics are carefully developed and illustrated. Lectures, experimental demonstrations, and recitations. All students in this course will meet three times a week. All may, and engineering students must, meet four times a week, the additional hour being devoted to problems and additional text work. Students in this course must schedule at least one hour of Course II. Plane Trigonometry prerequisite.

Throughout the year, three or four hours.

COURSE II.—Experimental Physics. Laboratory work to supplement Course I. The student is required to verify laws of Physics, to make measurements of physical quantities, and determine physical constants. Open to students who are pursuing or who have completed Course I.

Throughout the year, one to three hours.

COURSE III.—Elementary Analytic Mechanics, Statics, Kinematics, and Kinetics. Special attention is given to the application of mechanics to engineering problems. Open to those who have completed Mathematics II. and Physics I.

Throughout the year, two hours.

COURSE IV.—Physical Measurements. A laboratory course involving the adjustment and use of instruments of precision. The significance and accuracy of results, together with the sources of errors and means of their elimination are carefully discussed. Open to students who have completed Course I. and two hours throughout the year of Course II.

First or second term, three hours, or throughout the year, two to four hours.

COURSE V.—General Physics. A course in theoretical physics dealing principally with mechanics, heat, the properties of vapors and gases, the theory of solutions, the kinetic theory of gases, thermo-dynamics, magnetism and electricity. Students electing this course must schedule at least two hours of Course IV. Open to students who have completed Course I. and two hours throughout the year of Course II. and Mathematics II.

Throughout the year, two hours.

COURSE VI.—History of Physics. Open to students pursuing Courses I., III., or V.

Throughout the year, one hour.

OTHER COURSES. For students desiring to specialize in physics, courses dealing with any of the subjects treated under this department will be given as the work is demanded.

POLITICAL SCIENCE.

The sequence of courses in this field is planned so that emphasis is laid upon the functions of national, state and local governments in the United States, with the two-fold purpose of preparing men and women for the duties of citizenship, and of familiarizing students with a concrete example of government as a foundation for the more advanced theoretical work in the nature and functions of the state in general. Three courses are devoted to government and modern political problems, while the fourth is devoted to political philosophy.

COURSE I.—American Government. This course is divided between a study of the structure and functions of our national and state governments. Throughout the course present-day political problems of national and local interest will be made the subject of discussion in class. Beard's American Government and Politics and Bryce's American Commonwealth furnish an outline of the work.

First term, three hours.

COURSE II.—Municipal Government. This course includes an outline of the growth of American municipalities and a study of the organs and functional mechanism of modern cities in the United States and European countries. Emphasis is laid upon the newer tendencies in the progress of municipal government. Munro's The Government of American Cities and The Government of European Cities furnish a basis for the work.

Second term, three hours.

Course III.—Comparative Government. A study is made of the constitutional structure and organization of the more important governments of Europe. The object is to enable the student to compare these governments with each other and with our own. The course is open only to those who have

completed Political Science I. and II. and History I. Ogg's The Governments of Europe is the text.

First term, two hours.

COURSE IV.—Principles of Political Science. This course comprehends a study of the origin, nature and functions of the state and a critical examination of ancient, medieval and modern political theories. The requirements for admission into this course are the same as for Course III.

Second term, two hours.

PUBLIC SPEAKING.

The courses in public speaking are designed to train the student in the composition and the delivery of the various forms of public address. So far as possible, the work is adjusted to the particular needs of the individual student.

COURSE I.—Written analysis and interpretation of extracts from great orations. Extemporaneous speaking. This course aims to develop directness, earnestness, and dignity in public address. During the first term a careful study is made of the psychological principles which govern effective speaking. Sample speeches are studied and assigned passages are delivered by each student. During the second term the same work is continued but more extemporaneous work is required.

Elective for students who are taking or have completed English I.

Throughout the year, one hour.

COURSE II.—Argumentation and Debate. First Term. In this term the emphasis is laid upon theory. The principles of analysis, the rules of evidence, the elements of logic, and the kinds of fallacies are discussed. There is also brief-drawing leading up to written and oral debate. Second Term. The theory of the subject is concluded; the emphasis, however, is laid upon practice.

Elective for students who are taking or have completed Course I. *Throughout the year, one hour.*

COURSE III.—The Oration. First Term. An examination of the principles of the oration as presented in some such book as Shurter's The Rhetoric of Oratory. Each member of the class is required to present a paper giving the results of a study of some great English or American orator. Second Term. A number of selected orations will be tested in the light of the principles studied during the first term. Collateral readings. The writing of an original oration.

Elective for all students who have completed Course I.

Throughout the year, one hour.

COURSE IV.—Practical platform work in the delivery of the colloquial, elevated, and impassioned styles of oratory. Lectures on the philosophy of expression with accompanying studies to be worked out by the pupil in platform presentation. A systematic study of voice culture is begun in this course. The "Natural Tone Drill" is the system used. A study of the principles underlying gesture work is also required.

Elective for those who have completed Course I.

First term, two hours.

COURSE V.—The study of voice culture is continued in this course in a more advanced and technical way. Dramatic readings from Shakspere and interpretative studies of the masterpieces of literature will be given each student. Some extemporaneous platform work will also be required.

Elective for those who have completed Course IV.

Second term, two hours.

SPECIAL WORK for the individual pupil will be given in private lessons. A fee of ten dollars for each term hour will be charged.

SPANISH LANGUAGE AND LITERATURE.

COURSE I.—Elementary Spanish. Olmsted and Gordon's Spanish Grammar. Reading of such easy Spanish as Alarcon, El Capitán Veneno; Galdós, Dona Perfecta.

Throughout the year, three hours.

Given in 1914-15.

COURSE II.—A study of modern Spanish novels and dramas.
Throughout the year, two hours.

Given in 1915-16.

SURVEYING AND GRAPHICS.

The courses in Surveying and Graphics are based largely on the needs of the surveyor and draughtsman. The work is scientific and yet thoroughly practical in its scope and methods. While these courses are provided for students taking Group VIII., they are open as electives to all students.

COURSE I.—Descriptive Geometry. The problems are those relating to the point, line, the plane, the representation of surfaces, their intersection and development. The course includes instruction in the use and care of instruments, sketching, and isometric and cabinet projections.
Throughout the year, three hours.

COURSE II.—Plane Surveying. This course consists in a series of lectures, supplemented by exercises in the field. The student is taught the use of the chain, tape, compass, transit and level. The work in the drawing room consists in the computations incident to the work of the surveyor and in plotting from notes taken in the field.
First term, three hours.

COURSE III.—Railway Surveying. This course consists of a study of railway curves and earthworks. The field work includes a reconnaissance, the preliminary and location surveys and the necessary computations and maps.
Second term, three hours.

COURSE IV.—Mechanical drawing. This course includes plotting, tracing, the making of blue prints, detail and dimension drawing from sketches, models and from other drawings with a different scale.
Throughout the year, three hours.

COURSE V.—Applied Mechanics. This course includes a study of the strength and elasticity of beams and columns, with the application of mechanics to structural design.

Throughout the year, three hours.

PHYSICAL TRAINING.

For Young Men.—The object of this department is to give the student growth and increase of strength; to promote health and symmetrical development. These objects are accomplshed by regular class exercises in the gymnasium during the fall and winter, on the field in the spring, and by periods of optional work after class hours. Physical measurements and strength tests of all students are taken upon entrance and at the close of the college course and also at such other times as seem necessary. These form the basis of comparison of the students' conditions and needs, and determine the character and amount of exercise necessary to overcome marked deficiencies, irregular development, or such deformities as are amenable to physical exercise.

Students will receive personal advice with reference to habits of life, exercise, study, and recreation, as well as suggestions pertaining to personal hygiene.

Regular exercise, consisting of Swedish work, military gymnastics, Indian club, wand, and dumb-bell drills, principles of heavy gymnastics, is required of the men of the sophomore and freshman classes, three hours a week, from the middle of October to the middle of May. Elective work is offered the junior and senior classes.

For Young Women.—The aim of the work is to acquire a symmetrical development of the body as a

basis for health and grace. The training is based on Delsarte Philosophy of Expression, and the Swedish and German systems of free movements and light gymnastics. All young women are required to take the prescribed work unless excused on recommendation of the instructor.

The general work includes Indian club and dumbbell exercises, flexing exercises to overcome stiffness, exercises to develop control of the muscles, and all devices in training that secure freedom of bodily action.

The Gymnasium for Women is equipped with the most modern apparatus. Opportunity is offered to do individual work under the direction of the instructor in addition to the regular class exercises. In the basement of Hulings Hall there is a bowling alley for the exclusive use of young women.

REQUIRED WORK.

For graduation in any Group, all work specified as required must be completed, and additional subjects selected from the general list of electives sufficient to make a total of not less than one hundred twenty term hours. "Term hour" signifies one hour recitation weekly for one term of eighteen weeks. The prescribed work in physical training must also be completed. In the senior year a thesis and an oration are required. But in the Groups leading to the B. S degree two theses or a thesis and an oration may be presented.

Sixteen recitations weekly is the regular number, but the Registrar may assign seventeen. No student may take more than seventeen or less than twelve hours' work without the approval of the Registration Committee. In no case will additional hours be allowed except on the basis of previous high grade work.

LIST OF ELECTIVES.

The following list of elective studies includes all subjects that are elective in any of the Groups. Some of the subjects are required in one or more of the Groups, but are elective in others. The list is open to all students under the conditions named below.

1. The student must be fully prepared for the work.

2. He must avoid all conflicts in hours.

3. So far as possible all required work below his rank and Group Electives must be completed before advanced electives are chosen. This rule may be waived in cases where it is necessary in order that the student may be ready for a particular line of work in the latter part of his course.

4. A study once elected must be pursued to the end of the year or to the completion of the subject. No credit for graduation will be given for partial courses unless by arrangement made with the instructor and the Registrar before the study is begun.

5. The student's choice of elective work must exhibit a definite and coherent plan.

6. The faculty reserves the right to disapprove choice of electives.

The Arabic numerals refer to the number of hour recitations weekly; the Roman numerals refer to the detailed description of the course of instruction found on pages 45 to 83.

	First Term.	Second Term.
Astronomy I.	3	..
Astronomy II.	..	2
Astronomy III.	..	3

	First Term.	Second Term.
Astronomy IV.	..	2
Astronomy V.	4	4
Biology I.	4	4
Biology II.	1	1
Biology III.	3	3
Biology IV.	4	4
Biology V.	3	..
Biology VI.	..	3
Biology VII.	3	..
Biology VIII.	..	3
Biology IX.	4	..
Biology X.	..	4
Biology XI.	2	2
Chemistry I.	4	4
Chemistry II.	3	3
Chemistry III.	4	4
Chemistry IV.	4	4
Chemistry V.	3	3
Chemistry VI.	3	3
Chemistry VII.	3	3
Chemistry VIII.	4	4
Chemistry IX.	3	3
Chemistry X.	2	2
Economics I., II.	3	3
Economics III., IV.	2	2
English II.	2	2
English III.	3	3
English IV.	3	3
English V., VI.	2	2
English VII., VIII.	2	2
English IX., X.	3	3
English XI.	..	3
English Bible II.	2	2
English Bible III.	3	3
French I.	4	4
French II.	4	4
French III.	3	3
French IV.	3	3
French V.	3	3

	First Term.	Second Term.
French VI.	3	3
French VII.	1	1
Geology I.	..	4
Geology II.	4	4
Geology III.	3	..
German I.	4	4
German II.	4	4
German III.	3	3
German IV.	3	3
German V.	1	1
German VI.	2	2
German VII.	2	2
German VIII.	2	2
German IX., X.	2	2
German XI.	2	2
Greek I.	4	4
Greek II.	3	3
Greek III.	3	3
Greek IV.	2	2
Greek IV.	2	2
Greek V.	2	2
Greek VI.	4	4
Greek VII.	2	2
Hebrew	4	4
History I.	3	3
History II.	3	3
History III.	3	3
History IV.	2	2
History V.	2	2
Italian I.	3	3
Italian II.	2	2
Latin I.	4	4
Latin II.	3	3
Latin III.	3	3
Latin IV	2	2
Latin V.	2	2
Latin VI.	2	2
Mathematics I.	4	4
Mathematics II.	4	4

	First Term.	Second Term.
Mathematics III.	3	..
Mathematics IV.	..	3
Mathematics V.	3	3
Mathematics VI.	2	2
Philosophy I., II.	3	3
Philosoph III., IV.	3	3
Philosophy V., VI.	2	2
Philosophy VII.	..	3
Physics I.	4	4
Physics II.	3	3
Physics III.	2	2
Physics IV.	3	3
Physics V.	2	2
Physics VI.	1	1
Political Science I., II.	3	3
Political Science III., IV.	2	2
Public Speaking I.	1	1
Public Speaking II.	1	1
Public Speaking III.	1	1
Public Speaking IV., V.	2	2
Spanish I.	3	3
Spanish II.	2	2
Surveying and Graphics I.	3	3
Surveying and Graphics II., III.	3	3
Surveying and Graphics IV.	3	3
Surveying and Graphics V.	3	3

GENERAL INFORMATION.

COLLEGE FEES.

All students pay a fee of $100 a year, one-half payable at the opening of each term. This includes incidental, library, and gymnasium fees.

In the laboratories the following fees are charged each term:

Astronomy II., V. (Per term hour)	$ 2.00
Biology I.	2.00
Biology III. and IV.	4.00
Biology V. and VI.	3.00
Biology VII.	7.50
Biology VIII., IX. and X.	5.00
Chemistry I.	4.00
Chemistry II., III., IV., VI., VII., VIII.	7.50
Chemistry IX.	5.00
Geology I., II.	2.00
Geology III.	4.00
Physics II. (Per term hour)	2.00
Physics IV. (Per term hour)	2.50
Surveying I.	2.00
Surveying II.	3.00
Surveying III.	3.00
Surveying IV.	3.00
Surveying V.	3.00

In addition, breakage of material is charged at actual cost.

All college fees are due on the day of registration.

No student is admitted to class until all fees are paid or satisfactorily arranged for.

LIVING EXPENSES FOR YOUNG MEN.

The young men of the College board in Cochran Hall, in fraternity chapter houses, or in private families. The cost of board in Cochran Hall is $110.00 a year. The cost in chapter houses and private families is, as a rule, ten to twenty-five per cent. more. One half the room rent in Cochran Hall is due and payable at the opening of the first term and one half at the opening of the second term. A deposit fee of ten dollars is required when the room is reserved. This fee will be deducted from the second half year's payment. The rate for rooms varies from forty to sixty dollars a year for each student. All rooms except those occupied by seniors are to be surrendered not later than noon on Monday of Commencement Week. The amount for board in Cochran Hall is due as follows: $30.00 at the opening of the year; $30.00 on the second Monday in November; $30.00 at the opening of the second term; $20.00 on the third Monday in April. If the student has a room-mate, the necessary expenses for a year will fall within the following estimates:

	Low.	Liberal.
Term fee	$100.00	$100.00
Room rent, fuel, light	30.00	50.00
Table board	110.00	125.00
Books	10.00	20.00
Total	$250.00	$295.00

To be added to these figures are the laboratory fees, if the student pursues studies in which such charges are made. The cost of books will vary greatly from term to term, but a fair average will fall within the limits given.

Expenses other than those enumerated depend largely upon the student's tastes and habits, and the College does not undertake to estimate them. For the items mentioned the figures given are exact. Few students will have occasion for spending more than $300 a year. This, of course, does not include traveling expenses, clothing, or luxuries. An economical student can live on $250 a year; indeed not a few students spend less than this and yet live comfortably.

A circular detailing the expense of living in Cochran Hall will be sent on request.

YOUNG WOMEN.

Allegheny College is a co-educational institution. It endeavors to give young women the highest educational advantages open to young men. Instruction is given in the same subjects and by the same professors, and young women have access to all departments of the College, and are eligible to all honors. For students desiring to combine music with college work, opportunity for excellent instruction is afforded in the Pennsylvania College of Music.

Hulings Hall. Young women not living at home or with relatives are required to live in Hulings Hall. The constant aim is to furnish here an ideal college home for young women, where they shall be surrounded with influences which promote true and cultured womanhood. The Hall is under the charge of the Dean of Women, whose influence, with that of her competent assistants, is constantly felt in the social,

moral, and religious development of the young women under her care.

For the proper maintenance of the Hall as a college home for young women certain specific rules are essential, but it is the policy of the College to make only such regulations as will best protect the interests of those who reside there. As large a measure of self-government as possible is accorded and the young women of the upper classes assume a certain amount of responsibility for the management of the Hall. All proper freedom is allowed, but applicants for admission are reminded that the purpose of residence in Hulings Hall is not primarily social but educational, and the authorities in charge reserve the right to determine what best promotes the educational welfare of the residents in the Hall. A copy of the regulations for the government of the Hall will be sent on request.

The rooms are furnished with single beds, mattresses, pillows, chairs, and tables. Each resident supplies the following articles: Sheets, pillow-cases, bed covering, towels, and napkins.

The rates by the year, including board, room, heat and light, are $200.000 for each student. The rooms are all double, so that two students occupy each room. In case a student desires to room alone, there is an additional charge of $50.00. Bills are payable in four installments as follows: $60.00 the opening of the year, $50.00 the second Monday in November, $50.00 the opening of the second term, and $40.00 the third Monday in April. A deposit fee of $10.00 is required when a room is reserved. This fee is credited on the last payment of the year.

AID TO STUDENTS.

Self-Help.—Young men help themselves in several ways. A considerable number of the present students are earning their expenses in whole or in part. Some are employed in light work connected with the College or the boarding clubs. Some find in town opportunities for work of various kinds. A few are serving churches in the neighborhood of Meadville. It is the policy of the College to help students that help themselves.

The Lindley Endowment.—By the will of the late Miss Lucy Lindley, of Meadville, the College received the sum of ten thousand dollars, the interest of which is used to assist students dependent upon their own efforts to obtain an education. Application for aid from this fund should be made to the President. It should be remembered, however, that only a limited number of students can be aided in this way.

The Ballantyne Scholarship Fund.—In 1904 Mrs. Hettie F. Ballantyne, of Pittsburgh, gave to the College thirty thousand dollars in memory of her husband, James Alexander Ballantyne; the fund is to be known as the James Alexander Ballantyne Scholarship Fund. The income is used to pay the college term fees, and in cases of need, certain other expense, of the sons and daughters of ministers of the Pittsburgh Conference, and of young men from the territory of that conference who are studying for the ministry. This fund is administered by the officers of the College Faculty on recommendation of a committee of the Pittsburgh Conference.

The George W. Wright Scholarship Fund.—This is

a gift of $1,000 from the Honorable George W. Wright of Mercer, Pa., a former student of Allegheny College. The proceeds of this fund is to constitute a scholarship to be awarded each year on the nomination of Mr. Wright's representative.

High School Scholarships.—The Board of Trustees has established forty prize scholarships of fifty dollars each, to be awarded each year to honor students in forty of the best high schools in the patronizing territory of the college. In case the graduating class numbers ten or less, the scholarship must go to the one having maintained the highest scholastic rank during his high school course. If the class numbers more than ten, and less than twenty-five, it may go to the first or second in rank, and if there are over twenty-five in the class the scholarship may go to any one of the highest three. The amount of the scholarship is to be applied on the fees of the freshman year.

Educational Society Loans.—Students who are members of the Methodist Church, showing promise of usefulness in any form of Christian activity, may secure loans from the Educational Society. These loans are without interest and need not be paid in full until five years after graduation. These loans are offered not only to candidates for the ministry, but also to all needy and worthy students who show promise of useful service in lines of Christian activity and are endorsed by the home Quarterly Conference. The loans are made by the Society on the recommendation of the Faculty.

No aid from the above mentioned funds, or from any other source, is given to students who use tobacco.

A student having received aid from any of the College funds will be given a letter of dismissal to enter another college only after all such aid shall have been returned.

RELIGIOUS CULTURE.

The College was founded by Christian men for the promotion of Christian culture. It believes that education should always include, as its highest aim, the development of Christian character. It seeks to make the moral and religious life of the college community such that the student will be under as helpful influences as he would be in his own Christian home.

Chapel services are held each morning and all students are required to be present. Regular attendance on Sunday mornings at some church, selected by the student, or his parents, is also advised. Prayer meetings are held Wednesday evening of each week. The results are manifest in the quickening and strengthening of many in the religious life.

The Young Men's Christian Association and the Young Women's Christian Association are active and efficient organizations. Bible study classes and a mission study class are largely attended.

The religious influence of the College is not in any sense sectarian, but Christian. On the rolls this year are representatives from fourteen Christian denominations.

THE ADVISER SYSTEM.

Each student on entering is assigned to some member of the faculty, who serves throughout the fresh-

man year as a special counsellor on all matters in which the student finds the need of frank and friendly advice. The relation between adviser and student is intended to be perfectly fraternal, without restraint on either side. At the beginning of the sophomore year the professor under whom the student does his major work becomes his adviser for the remainder of his course.

CLUBS.

The Classical Club, composed of the instructors in the classical departments and about twenty-five advanced students, meets for the review of new books and current literature, and for the reading and free discussion of papers submitted by members on lines of classical investigation.

The Quill Club represents the journalistic and literary interests of the College. Its aim is to encourage press correspondents, to co-operate intelligently with the editors of the college publications, and to foster original and creative literary effort. It meets monthly. The membership is limited to thirty.

The German Club is an organization for students under the leadership of the professor of German that meets fortnightly for the purpose of arousing and sustaining interest in the German language as a vehicle of oral expression and of studying German life, institutions, and politics. Membership is open to all students who have had one or more years of regular class-room work in German.

The Philo-Franklin Forum is a society organized

on the plan of a national deliberative body. At its weekly meetings various public and college problems are discussed, and parliamentary drill is afforded. Its membership consists of students who are especially interested in debate, under the guidance of representatives of the departments of English and Public Speaking.

Le Petit Salon meets fortnightly for the purpose of French conversation and study of French art, literature, etc. Its alternate sessions are in conjunction with the Meadville branch of the Alliance Francaise, an international organization. The membership is limited to thirty and includes the instructors and advanced students in French.

The Modern Problems Club, under the head of the History Department, meets monthly for the discussion of current, social, economic and political problems. This club, which is a branch of the Intercollegiate Civic League, is limited to juniors and seniors.

The Tingley Biological Club, composed of instructors and advanced students in the Biology Department, meets fortnightly for the presentation and discussion of papers by the various members; each member presents two papers a year dealing with some phases of biological research.

PRIZES.

Three prizes are open to competition by students of the college classes.

The Wakefield Oration Prize.—Mr. James A.

Wakefield, of Pittsburgh, furnishes a prize of fifty dollars in the name of his grandfather, the Rev. Samuel Wakefield, D.D., awarded in February of each year, to the young man delivering the best oration. The winner of this prize represents the College in the Intercollegiate Civic Oratorical League Contest held in May.

The Philo-Franklin Oration Prize.—The old Philo-Franklin Literary Society has provided a permanent endowment fund of six hundred dollars for prizes in oratory. The income will provide a first and a second prize. The contest is open only to members of the Philo-Franklin Forum.

Heckel Prizes in Science.—Two prizes, a first prize of thirty-five dollars and a second prize of fifteen dolars, are given each year by Dr. Edward B. Heckel, of Pittsburgh. These prizes are awarded for the best two theses written by graduate or undergraduate students upon scientific subjects. The theses are presented on the first day of May and the prizes awarded the following Commencement Day.

ATHLETICS.

Outdoor exercise and athletic sports under the direction of competent supervisors are fostered as helpful in complete physical training, but are made consistently secondary to scholastic work. No student may take part in athletic events without the consent of the physical director after a physical examination. The athletic interests of the College are in the hands of the Athletic Association, to which all members of the College are eligible, and the business is managed

and all funds administered by an Athletic Advisory Board, composed of four members of the faculty and five students. All details of athletic contests must receive the sanction of the Athletic Board, and every precaution is taken to insure clean athletics. Players must be *bona fide* students taking not less than twelve hours work, must have been registered at the opening of the year in which they compete, may not have more than one condition in any preceding work or be delinquent in the current term's work, and may not receive remuneration, directly or indirectly, for their services. The College is a member of the National Collegiate Athletic Association and conforms to the minimum eligibility requirements of that organization. Compe tent coaches are provided.

DEGREES.

The degree of Bachelor of Arts in Classical Languages is conferred upon those who complete in a satisfactory manner Group I. or II. The degree of Bachelor of Arts in Modern Languages is conferred upon those who complete in a satisfactory manner Group III. or IV. The degree of Bachelor of Science is conferred upon those who complete in a satisfactory manner Group V., VI., VII., or VIII.

Bachelors of Arts of this College, or of another of equal rank, may pursue, in residence, work in not more than two distinct lines of study; and on the completion of a full year's work, including a satisfactory thesis, receive the degree of Master of Arts.

The Degree of Master of Science is conferred on Bachelors of Science who have completed the work of

Groups V., VI., VII., or VIII., on the same conditions as the degree of Master of Arts is conferred upon Bachelors of Arts.

Every person receiving a degree from the College pays a diploma fee of five dollars.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

Fitzgerald, Thomas Raymond.....Mt. Pleasant
A. B., Allegheny College, 1913—Chemistry.

Judge, Katharine Mabel.....Wellsville, N. Y.
Ph. B., Alfred University, 1912—English and History.

Seniors.

Anchors, Muza .....New Kensington
Bacon, Ethel Katherine .....Meadville
Barackman, Paul Freeman .....Linesville
Bardall, Mary Elizabeth.....Moundsville, W. Va.
Beisel, Ben Raymond .....Pittsburgh
Boyer, Kile .....Evans City
Breckenridge, Banks Bon .....Meadville
Browning, Mabel Ruth .....Scottdale
Burwell, Charles Sidney .....Meadville
Cares, Charles William .....Meadville
Carr, Clarence James .....Meadville
Carroll, Marion Agnes .....Kane
Cohen, Isadore .....Sharon
Coon, William Edwin .....Albion
Crawford, Robert .....Cooperstown
Davis, Clara Rosannah.....Union City
Delp, August .....Meadville
Dodd, Ruth .....Zanesville, O.
Dotterrer, Charles Milton .....Muzette
Elbel, Louis Edward .....Punxsutawney
Fabian, Frederick William .....Diamond
Fegely, Walter Hanchett.....North Girard
First, Fearl Cecil .....Carlton
Fisher, Stella Adda.....Ellwood City
Freer, Nellie Elizabeth.....Galion, O.

Girsham, Ellen May.....Yenangyoung, Burma
Graham, James Hebron, Jr.....Meadville
Hammond, Gertrude Lenore .....Reynoldsville
Harper, Edgar Robert .....Meadville
Henry, William Lawrence.....Clinton, N. J.
Holt, Hety Linda .....Brockwayville
Hotson, Mary Helen .....Meadville
Hunt, Sara Althea .....Conneaut, O.
Jeffery, Morey Potts .....Meadville
Johnston, Paul William.....Oil City
Kellogg, Hazel Gay .....Titusville
Kline, Paul Vorse.....Oil City
Lane, Winfield Scott.....Mt. Pleasant
Lindberg, Paul.....West Homestead
MacGowan, James Reese .....Smethport
Mechlin, Fred Joseph.....Grove City
Mosier, Rodney Dean .....Hayfield
Mueller, Gertrude Anna.....South Bend, Ind.
Nicholls, Jonter Arthur .....Sharon
Nichols, Pierrepont Herrick .....Meadville
Norton, Samuel Harry .....Meadville
Parmenter, Ottie Albert .....Erie
Parsons, Willard Deichmann.....Saegertown
Pierson, John Clarence .....Meadville
Ramsey, Harry Floyd .....Renfrew
Ramsey, Nathan LeRoy .....Renfrew
Rea, Caroline Lois .....Linesville
Reed, Gertrude .....Sandy Lake
Reed, Jessie Stoner .....Scottdale
Richard, Frank Alvin.....Turtle Creek
Ricker, Ruth Mildred .....Meadville
Robinson, Paul .....Robinson
Rose, George DeWitt.....North Kingsville, O.
Sansom, Mary Moorhead .....Clarion
Seitz, Margaret .....Hamilton
Shryock, Gertrude Miriam .....Meadville
Smith, Rachel Eleanor .....Meadville
Strauss, Charles Leonard .....Saegertown
Sweetland, Clair.....South Dayton, N. Y.
Taylor, John Theodore .....Irwin

Thoburn, Isabella ..... Meadville
Thoburn, Theodore ..... Meadville
Thoburn, Thomas Wilson ..... Meadville
Thomas, Mary Helen ..... Meadville
Thomas, Paul Eugene ..... Meadville
Thompson, Ada Belle ..... Cochranton
Walker, Charles Roland ..... Bruin
Waring, Marie ..... Mansfield, O.
Weidle, Everett Steele ..... Erie
Weissenborn, Thelma Ora ..... Jersey City, N. J.
Wells, Louis ..... Wellsville, O.
Whiting, William Alonzo ..... Conneautville
Wilkins, Bernice ..... Union City
Zelwis, Albert ..... Pittsburgh

Seniors, 79.

Juniors.

Abrams, Dorothea Blanche.....Jamestown, N. Y.
Almendinger, Raymond Burgett .....Russell
Arnold, Floyd Elmer .....Athens
Askey, Edith F.....Oil City
Askey, Harrison L.....Billingham, Wash.
Baker, Cecil Boyer .....Espyville
Baker, Charles Frank .....Meadville
Barkley, Mary Josephine.....Braceville, O.
Barnes, Faye Elizabeth.....Toledo, O.
Bassett, Harriette Burritt.....Bridgeport, Conn.
Boyd, Howard .....Meadville
Bright, John .....New Castle
Brockway, Clair Frederic.....South New Lyme, O
Brooks, Frank Gary .....Rochester
Brooks, Harold King .....Mill Run
Brownell, Howard Fred .....Smethport
Chapin, Alice Elizabeth .....Meadville
Chapin, Viva Waive.....Union City
Dashiell, Dorothy.....Washington, D. C.
Davenport, Irene Bessie .....Meadville
Dotterrer, Melvin Allen .....Kellettville
Downing, Robert Harold .....Meadville
Duffy, Hazel Marie .....Corry
Dunbar, Donald George .....Meadville
Dunbar, Douglas Mansor .....Meadville
Dunlap, Charles Walter .....Pittsburgh
Ebaugh, Esta Bernice .....Bellevue
Ellis, Janet Adelia .....Meadville
Fahr, Herman Henry .....Meadville
Flick, Charles Willis .....Tionesta
Fowler, Katharine Roe .....Meadville
Fox, Ralph .....Kingsville, O.
Gealy, Ethel May.....Oil City
Gilbert, Carl A.....Scottdale
Gillespie, Mae .....Meadville
Godsave, William Albert .....Meadville
Gornall, Oliver .....Saegertown
Gould, Louise .....West Springfield
Graham, Orson James .....Oil City

Grant, Harry Vane ..... Meadville
Hartman, Hartley John ..... Pittsburgh
Heath, Clyde Hartson ..... Corry
Henton, Fay ..... Spartansburg
Howell, Marie Julia ..... Buffalo, N. Y.
Hutchinson, Joe Berklett ..... Parkersburg, W. Va.
Jacobs, Homer R ..... Emlenton
Johnston, Linda Beatrice ..... Meadville
Jones, Maree Elizabeth ..... Madison, O.
Kemp, Alexander Hershman ..... Ingram
Lane, James Garfield ..... Meadville
Lavely, Ruth Elizabeth ..... Meadville
Leiphart, George Barden ..... Springboro
Lewis, Iva Belle ..... West Elizabeth
Lippitt, Margaret Lucile ..... Meadville
Long, Wendell Partridge ..... Naples, N. Y.
McKay, Eleanor ..... Meadville
McKinley, David ..... Meadville
McKinney, Arlene ..... Coatesville
McKinney, Velma Frances ..... Coatesville
McLean, Margaret ..... Meadville
McMahon, Agnes Margaret ..... Erie
MacConnell, Charles Marshall ..... Franklin
Manne, Roy Egar ..... New Castle
Mellon, Melvin Guy ..... Conneaut Lake
Metcalf, Malcolm McNaughton ..... Jamestown, N. Y.
Miller, Carl Cummings ..... Mt. Pleasant
Miller, Clarence Arthur ..... Meadville
Mook, Harold Floyd ..... Saegertown
Mulfinger, Carl Leonard ..... Meadville
Mullian, Beatrice Maree ..... Westford
Nebinger, Ruth Grove ..... Homestead
Nelson, Lillian ..... McKeesport
Norris, S. Evelyn ..... Meadville
Palmer, Malcolm Rice ..... Meadville
Pappenhagen, Louis ..... Meadville
Platt, Rose Alta ..... Oil City
Quinn, Hannah Marie ..... McKeesport
Ramirez, Pedro Ortiz ..... Manuabo, Porto Rico
Reichel, Frank H ..... Saegertown

Reis, Lillian Morton ..... Saegertown
Reynolds, Caryl Moore ..... Pittsburgh
Ricker, George Albert ..... Meadville
Robinson, Edward A..... Sharpsburg
Robinson, Jeanette Goldstrohm ..... Boston
Shaner, George A..... Butler
Simpson, Margaret Mae ..... New Brighton
Singley, Helen Josephine ..... Meadville
Smith, Theodore Fell ..... Greenville
Smock, Jessie Bernice ..... Meadville
Sutton, Edith Mildred ..... Butler
Taylor, Harrie Smith ..... Cambridge Springs
Wasson, Harry Christopher..... Meadville
Webster, Rex Duane ..... Avonia
Wiley, Sarah Virginia ..... Seattle, Wash.
Wing, Helen Kissick..... New Castle

Juniors, 95.

Sophomores.

Adams, Helen Rose ..... Meadville
Aey, Charles Arthur ..... New Castle
Allgood, Ruth Louise ..... New Castle
Allshouse, Charles Vance ..... Creighton
Amon, Fred Hughes ..... Greenville
Angove, Dortha R. ..... Oil City
Armstrong William Jefferson, Jr. ..... Kane
Bail, Homer Milton ..... Springboro
Bash, Lawson Greene ..... Waynesburg
Beatty, Vina Marguerite ..... Oil City
Bell, Samuel, Jr. ..... West Middlesex
Best, Josephine Elizabeth ..... Meadville
Bitler, Tillie Ella ..... Meadville
Blasdell, Robert Allen ..... Dayton, N. Y.
Brownell, William Arthur ..... Smethport
Bundy, Walter R. ..... Quaker City, O.
Burns, Jesse Erwin ..... North Washington
Campbell, Ginevra Isabel ..... Kittanning
Campman, Seeley Franklin ..... West Middlesex
Carroll, Catherine ..... Meadville
Carroll, Mary Carrier ..... Brookville
Cole, Helen ..... Meadville
Colt, Harold Dayton ..... Cambridge Springs
Cox, Raymond Andrew ..... Kane
Curry, Albert Gore ..... Wilkinsburg
Depp, Walter Mark ..... Punxsutawney
Downing, Florence ..... Meadville
Drake, Homer Emmet ..... Ashtabula, O.
Dundon, Lewis J. ..... Edinboro
Edmonds, Audley Rexford ..... Bruin
Ellis, William Andrew ..... Meadville
Ferguson, Mary Jeannette ..... Meadville
Foster, Lois Clara ..... Oakmont
Gaskill, Hazel Mary ..... Meadville
Gates, Helen Haldena ..... Oil City
Gealy, Fred D. ..... Oil City
Hall, Edith ..... Meadville
Harper, Daphne ..... Meadville
Harper, Harold Vernon ..... Butler

Hasek, Helen Georgia ..... Franklin
Hawkey, Alice Lucille ..... Tidioute
Henton, Fern ..... Spartansburg
Herriott, Albert Thompson ..... Sharpsville
Hickman, Elmer Wallace ..... Arnold
Hoffman, Mary Theresa ..... Sheffield
Hoffman, Ray Earl ..... Phalanx, O.
Hudson, Ethel Gertrude ..... Greensburg
Hughes, Arthur Fitzgerald ..... Brookville
Johnson, Curtis Corydon ..... Meadville
Jones, Paul Ashton ..... West Brownsville
Kawashiri, Seishu ..... Nagasaki Ken, Japan
Kelley, Martha M. ..... Butler
Kendall, Ralph Newton ..... Conneautville
Kightlinger, Emma Florence ..... Meadville
Kleckner, Ethel Lillian ..... Cambridge Springs
Klinginsmith, John Glenn ..... Conneaut Lake
Koehler, Robert Philip ..... Reynoldsville
Kramer, Norbert Clair ..... Meadville
Leaf, Edwin Barnhardt ..... Irwin
Ling, Ernest ..... Meadville
Lowe, Louis Malcolm ..... Sugar Grove
Lydell, Lulu Mae ..... Falconer, N. Y.
McCoy, Arley Von ..... Corinth, W. Va.
McCoy, Cecil Glen ..... Corinth, W. Va.
McKay, Leo ..... Sharon
McKenna, Anna Elizabeth ..... Kane
McLean, Bailey Courtney ..... Meadville
Mackenzie, Helen Pithie ..... Oil City
Marvin, Isabelle Edith ..... Meadville
Mellon, David Roy ..... Conneaut Lake
Miller, Marion Ruth ..... Erie
Munhall, Albert Francis ..... Meadville
Nash, Clarence Almerion ..... Chautauqua, N. Y.
Neale, Faye Caroline ..... Reynoldsville
Nelson, Benn Elwin ..... New Castle
Newlin, Edwin Benson ..... McKeesport
Nicklin, Harry Donald ..... Franklin
Park, Boyd Nelson, Jr. ..... Franklin
Pierson, Harry H. ..... Meadville

Pillow, Richard H.....Butler
Putney, Sara Alva.....Beloit, Wis.
Rankin, Harry Paul .....Franklin
Reed, Earle Lyons .....Butler
Reis, Wilbur Whippo .....Saegertown
Rhoades, Robert L.....Mt. Pleasant
Rial, Leona Catherine .....Ruffsdale
Ritchie, LaMarr .....Indiana
Ritezel, Frederick Graeter.....Warren, O.
Roach, Ethel Stover.....Pittsford, N. Y.
Roberts, Georgia Pauline .....Albion
Roberts, Nellie Genevieve .....Meadville
Ross, Hazel Alma .....Oakmont
Ross, Margaret .....Chautauqua, N. Y.
Sanner, Fred Henderson .....Wilkinsburg
Scott, Walter Leland .....Kane
Sheets, Sankey L.....Greensburg
Shields, Charles Frederic.....New Kensington
Stebbins, Dorothy Merle.....Silver Creek, N. Y.
Stevenson, Charles Howard .....Coraopolis
Taylor, Blanche .....Meadville
Tear, John W.....Painesville, O.
Thoburn, Bernice .....Meadville
Trace, Fred Birch .....Meadville
Van Slyke, Henry Vincent.....Sinclairville, N. Y.
Whipple, Charlotte .....Oil City
Whipple, Marian Alice.....Oil City
White, Edith Mary .....Meadville
Wolf, Charles R.....Connellsville
Wolf, Paul Burton .....Connellsville
Yocum, William Ward .....Meadville

Sophomores, 110.

Freshmen.

Acker, Lewis Franklin, Jr. ..... Meadville
Askey, Edwin Vincent ..... Billingham, Wash.
Bacon, Frank Haskell ..... Meadville
Bailey, Lynn Hamilton ..... West Collingswood, N. J.
Baird, Olga Gwendolyn ..... Meadville
Baker, Edison Howard ..... Greenville
Barnhart, Arthur David ..... Scottdale
Barns, Robert Howard ..... Albion
Bourquin, Josephine ..... Conneaut, O.
Bowers, George Franklin ..... Big Run
Boyd, Nelson Henry ..... Sharon
Brooke, Grace Loar ..... Uniontown
Brooke, Julia ..... Uniontown
Brookmire, Neil Ivan ..... Findley's Lake, N. Y.
Buchanan, Genevra Leora ..... Meadville
Calder, Donald ..... Meadville
Campbell, Charlotta Marie ..... Meadville
Camper, Archibald Hayward ..... Baltimore, Md.
Carew, Mary Katherine ..... Franklin
Carr, Georgia Edna ..... Bemus Point, N. Y.
Catherman, Raymond Fowler ..... Meadville
Chase, Elizabeth ..... Greenville
Clay, Paul Eugene ..... Franklin
Clemens, John Waldron ..... New Castle
Clendenien, Miller Bartley ..... Tarentum
Clendenin, Mary Adelaide ..... Meadville
Cleveland, Rachel ..... Erie
Clough, Veleda Louise ..... Corry
Craig, George Smith ..... Mercer
Curtis, Chalmer Clinton ..... Emlenton
Davison, Helen Miles ..... Oil City
Dean, Anna Elizabeth ..... Conneautville
DeLand, Ruth Elizabeth ..... Sheridan, N. Y.
Diamond, Helen Troy ..... Meadville
Diefenderfer, Vivien Catherine ..... Conneaut, O.
Doane, Foster Baird ..... Butler
Drake, Lowell Claudius ..... Ashtabula, O.
Ebenhoch, Grace Elizabeth ..... Belle Vernon
Ellis, Murray Henry ..... Meadville

Emery, Henderson Donaldson ..... Butler
Fetzer, Lilian Marie ..... Meadville
Flahaven, Mary Ruth ..... Bemus Point, N. Y.
Foreman, James Aura ..... Tionesta
Frishkorn, Mark Wright ..... New Castle
Gill, Eleanore ..... Meadville
Hanks, Eda Gertrude ..... Meadville
Hart, Rockwell Edgar ..... Girard
Hartman, Ruth Elizabeth ..... Meadville
Hawkey, Vincent Grant ..... Tidioute
Hazen, Mildred Lucile ..... Titusville
Hendershot, Elizabeth Frazer ..... Meadville
Hill James Russell ..... North East
Hill, Paul Emerson ..... Emlenton
Hodgkinson, Cecil H ..... Meadville
House, Lillian Estelle ..... Conneaut, O.
Irvin, Glenn Warren ..... McKeesport
Johnson, Genevieve Cameron ..... Meadville
Johnson, Hildur Eugenia ..... Titusville
Jones, Harry Albert ..... Meadville
Kahle, Carmen ..... Oil City
Kahle, Raymond Frederick ..... Buffalo, N. Y.
Kepner, Lee David ..... Hartford, O.
Klinger, John Edward ..... Butler
Krise, Arba Talmon ..... Waynesboro
Kuhl, Harold Woolsey ..... North Girard
Kulp, Helen Marie ..... West Middlesex
Lackey, Ira Cuttler ..... Clark's Mills
Latshaw, Paul Flemming ..... Kittanning
Leiphart, Jerusha ..... Saegertown
Longanecker, Don Cameron ..... Khedive
Lyon, Esther ..... Meadville
McConnell, William Ethelbert ..... Parnassus
McKean, William Roy ..... Sheakleyville
McKinney, Clarence Eugene ..... Meadville
Maxwell, Rachel Amanda ..... Meadville
Miller, Charles Miner, Jr ..... Pittsburgh
Monroe, Grace ..... New Castle
Monroe, Lowell White ..... New Castle
Moore, Robert Law ..... Meadville

Mumford, Graydon William ..... Beaver Falls
Nebinger, Martha Kirk ..... Homestead
Neill, James Maffett ..... Clarion
Nodine, Frank Ernest ..... Titusville
North, Frankie Helen ..... Meadville
Pappenhagen, Albert Burnell ..... Meadville
Patterson, Elmer R. ..... New Castle
Paul, Winifred Eugenia ..... Meadville
Peckham, Harold Dexter ..... Wickford, R. I.
Phipps, DeWitte Miley ..... Emlenton
Pitt, Ruth Elnora ..... Ripley, N. Y.
Powell, Fred ..... Kittanning
Preston, Bessie Cecilia ..... Monessen
Putney, Thompson Buell ..... Beloit, Wis.
Reider, Kenneth ..... New Castle
Richey, Mildred Irene ..... Vandergrift
Riddle, Rosamond ..... Seattle, Wash.
Rowe, Martina ..... Turtle Creek
Sackett, Edson Edward ..... Saegertown
Scott, Genevieve Annette ..... Corry
Scott, John Bell ..... Lynchburg, Va.
Shea, Gertrude Helen ..... Meadville
Shenefelt, Arthur Merle ..... Pitcairn
Shryock, Merwin ..... Meadville
Smith, Agnes Elizabeth ..... Meadville
Smith, Robert Gittens ..... Barbados, West Indies
Stanfield, Arthur E. ..... Renfrew
Stolz, Pauline Gray ..... Meadville
Stone, Esther Alice ..... Butler
Swoap, Lewis Milton ..... Barnes
Sykes, Elizabeth Ritter ..... Franklin
Tarr, Jesse ..... Wellsville, O.
Thomas, Dale E. ..... Dorset, O.
Tuttle, Robert J. ..... Cattaraugus, N. Y.
Van Hoesen, Agnes Laidlaw ..... Meadville
Wagner, Charles Conroy ..... Barnes
Warner, Helen Louise ..... Meadville
Weaver, John Carson ..... Beaver Falls
Weide, Ralph Lafayette ..... New Castle
Weldon, Niles ..... West Springfield

White, Anderson McLean ..... Meadville
Wilber, Albert Bennett ..... Cambridge Springs
Winn, Walter Leroy ..... Basking Ridge, N. J.
Wise, John Laing ..... Butler
Wood, Harvey Raymond ..... Pittsburgh
Wright, John Ernest ..... Irwin
Yost, Robert ..... South Fork
Zuver, Dudley DeForest ..... Greenville

Freshmen, 127.

Special Students.

Gilbert, Earl Brooks.....Scottdale
Hotchkiss, Ruth Arline.....Meadville
Palmer, Benjamin Harvey.....Meadville
Runninger, Guy M.....Franklin
Swift, Carrie Ladds.....Franklin

Specials. 5

Summary.

	Men	Women	
Resident Graduates	1	1	2
Seniors	49	30	79
Juniors	52	43	95
Sophomores	66	44	110
Freshmen	77	50	127
Special	3	2	5
Total	248	170	418

DEGREES CONFERRED

June 18, 1913.

Doctor of Divinity.

Rev. Walter Eugene Thompson
Rev. Harry Lester Smith
Rev. Frank S. Neigh

Master of Arts.

Frank Owen Amon
Emma Edson
Edith Rowley
Grace Thomas

Master of Science.

T. Dudley Ballinger

Bachelor of Arts.

Ruth Frances Baldwin
Ethel Bayard
Maude Irene Beatty
Perry Alvin Beck
Annie Gray Bishop
David Joslin Blasdell
Carl Allan Borland
Esther Cousins
Max Neale Croasmun
Edith May DeLand
Howard Harrison Denison
Emma Dickey
Archie Nevada Dunsmore
Earl Thompson English
Thomas Raymond Fitzgerald
Vera Lillian Foster
Beulah Marie Grauel
Florence Minerva Griswold
Ernest Jackson Hall
Helen Harper
Wesley Glenn Hayes
William Rufus Hofelt
Clara Romaine Hutchinson
Agnes Ruth Kelsay
Elizabeth Daggett Lord
Fawn McDonald
Eva Emily McKinney
Owen Caldwell McLean
James Wilson Mates
Foresta Hazel Maynard
Charles Spurgeon Miller
Clyde Louis Nevins
Frances Norton
Ellen Hazel Olson
LeRoy Peterson
Marie Cecelia Poux
Alfred Alonzo Rea
Dorothy Sansom
Lottie Vildena Smith
Clyde Vincent Sparling
Happer Beacom Storer
Laura Frances Strickland
Marian Ward Thomas
Ruth Miriam Thomas
Jesse Matilda Tomb
John Dick Van Horn
Mary Walters
William Hugh Wells
Harry Julius Wieler
Elsie Beth Williams
Rose Green Williams
Edna A. Yost

Bachelor of Science.

Ben Harrison Ball
Joseph Cooper Blucher
Claudius Virgil Calvin
Norman David Doane
William D. Dotterrer
Claude Alan Eckels
Victor Weston Fugate
Wilbur Floyd Galbraith
Harold Jackson Gordon
William Haine
Henry Paxton Hart
Charles Clark Hasely
Louis Leberman Hawk
Cordon Earle Hinckley
Richard Benton Kahle
Edmund Rudolph Kramer
Evans McKay
James Martin Miller
Seth Todd Perley
Andrew Rosenberger
Ernest Whitney
Abram Wilkinson
Charles Burton Winn

PHI BETA KAPPA.

ETA CHAPTER OF PENNSYLVANIA.
Chartered September 2, 1901.

OFFICERS.

President.

President William H. Crawford.

Vice President.

Hon. John J. Henderson.

Secretary.

Professor Willliam A. Elliott.

MEMBERS INITIATED IN JUNE, 1913.

From the Senior Class.

Beulah Marie Grauel
Florence Minerva Griswold
Ernest Jackson Hall
Elizabeth Daggett Lord
Owen Caldwell McLean
Dorothy Sansom
Clyde Vincent Sparling
Laura Frances Strickland
Harry Julius Wieler

From the Alumni.

Wayne Whipple, '77.

Annual Address, June 16, 1913.

Dean Kendric C. Babcock, Ph.D.,
Subject, "Sources of Democratic Sentiment."

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378.748
AH1

THE COLLEGE BULLETIN

SERIES XIV, No. 1
FEBRUARY, 1915

CATALOGUE

1914-1915

ALLEGHENY COLLEGE

FOUNDED IN 1815

ONE HUNDREDTH YEAR

CATALOGUE

OF

ALLEGHENY COLLEGE

FOR

1914-1915

MEADVILLE, PA.
1915
A.U.W.

THE ALLEGHENY COLLEGE BULLETIN

PUBLISHED QUARTERLY
BY THE COLLEGE.

SERIES XIV, No. 1.
FEBRUARY, 1915.

Entered as second-class matter in the postoffice at Meadville, Pa.

CATALOGUE FOR THE ACADEMIC YEAR 1914-15

AND ANNOUNCEMENTS OF COURSES FOR 1915-16

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1915

APRIL

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1916

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CALENDAR.

1915.

April 24, Saturday—Founders' Day.

28, Wednesday—Last day for presenting Senior Orations and Theses.

May 10, Monday—Choice of Senior Speakers.

25, Tuesday—Moving-Up Day, a holiday.

June 1-19—Second Term Examinations.

THE ONE HUNDREDTH ANNIVERSARY OF THE FOUNDING OF ALLEGHENY COLLEGE

June 19-24, 1915

PROGRAM OF EXERCISES

Saturday, June 19, 3:30 P. M. Baseball game. Undergraduates *vs.* Alumni.

7:30 P. M. to 10:30 P. M. Open House to Alumni. All college buildings, including Dormitories and Fraternity Houses, will be open, and the Professors will be in their respective rooms to greet returning Alumni.

Sunday, June 20, 10:45 A. M. Anniversary Sermon. Bishop WILLIAM FRASER MCDOWELL, D.D., LL.D. Stone Church.

2:30 P. M. A Missionary Conference, Bishop WILLIAM BURT, D.D., LL.D., presiding. Address: Bishop JAMES M. THOBURN, D.D. Address: Bishop W. F. OLDHAM, D.D. Short addresses by Alumni Missionaries—GEORGE S. MINER, WILBUR C. SWEARER, LAURA TEMPLE and others.

6:45 P. M. Open Air Meeting on site of Log Court House in which the Foundation Meeting was held on the evening of June 20, 1815.

7:45 P. M. Platform Meeting in Stone Church. Theme: *The Christian College.* I. *Its Ideals and Aims,* President HERBERT WELCH, D.D., Ohio Wesleyan University. II. *Its Product in Men and Movements,* The Reverend THOMAS NICHOLSON, D.D., Secretary of the Board of Education. III. *Its Importance as a Factor in the Making of America,* President HENRY CHURCHILL KING, LL.D., Oberlin College.

Monday, June 21, 9:00 A. M. Conferring of Degrees on Members of the Graduating Class. Address: Chancellor SAMUEL B. MCCORMICK, LL.D., University of Pittsburgh.

10:00 A. M. Class Reunions.

12:00 M. Organ Recital. WILLIAM C. CARL, Mus. D.

12:30 P. M. Class Breakfasts.

2:00 P. M. Alma Mater Exercises. Historical Address: IDA M. TARBELL, L.H.D., '80. Address: Honorable JOHN J. HENDERSON, LL.D., '62, representing the Trustees. Address: Professor WILLIAM A. ELLIOTT, L.H.D., '89, representing the Faculty. Address: The Reverend CHARLES BAYARD MITCHELL, D.D., '79, representing the Alumni.

4:00 P. M. Historical Pageant. First Presentation. The pageant book has been written by GEORGE P. BAKER, Professor of Dramatic Literature in Harvard University, who will give personal direction to all rehearsals and presentations. The Pageant is a contribution of the Alumni, who require that an admission fee shall be charged.

6:30 P. M. Alumni Dinner.

10:00 P. M. Campus Illumination and Class Events.

Tuesday, June 22, 9:00 A. M. Group Conferences of Alumni.

9:30 A. M. A Conference on the American College. President ABRAM W. HARRIS, LL.D., Northwestern University, presiding. *The Place of the Languages and Literatures in the College Curriculum,* Professor PAUL SHOREY, LL.D., University of Chicago. *The Place of the Newer Humanities in the College Curriculum,* Dean CHARLES H. HASKINS, Ph.D., Harvard University. *The Place of the Physical and Natural Sciences in the College Curriculum,* Professor EDWIN G. CONKLIN, Ph. D., Princeton University.

12:30 P. M. Organ Recital. WILLIAM C. CARL, Mus. D.

1:00 P. M. Luncheon to Delegates.

2:00 P. M. A Conference on the American College, continued. Provost EDGAR F. SMITH, LL.D., University of Pennsylvania, presiding. *The College as a Preparation for Professional Study,* President RUSH RHEES, D.D., University of Rochester. *The College as a Preparation for Practical Affairs,* President NICHOLAS MURRAY BUTLER, LL.D., Columbia University. *The Present Status and Probable Future of the College in the East,* President JOHN H. FINLEY, LL.D., University of the State of New York.

4:00 P. M. Historical Pageant. Second Presentation.

7:00 P. M. College Sing on Inner Campus. Led by Glee Club Men of all years.

8:15 P. M. A Conference on the American College, continued. *The Ideals and Achievements of the American College,* President W. H. P. FAUNCE, LL.D., Brown University. *The American College in the Life of the American People,* Commissioner PHILANDER P. CLAXTON, LL.D., Bureau of Education, Washington. Music by College Chorus.

Wednesday, June 23, 9:00 A. M. A Conference on the American College, continued. President CHARLES F. THWING, LL.D., presiding. *The Present Status and Probable Future of the College in the South,* President WILLIAM P. FEW, Ph.D., Trinity College. *The Present Status and Probable Future of the College in the West,* President WILLIAM F. SLOCUM, LL.D., Colorado College. *The Function of the College as Distinct from the High School, the Professional School, and the University,* President ALEXANDER MEIKLEJOHN, Ph.D., Amherst College. Discussion led by President ISAAC SHARPLESS, Haverford College.

11:00 A. M. Reception to Delegates from Educational Institutions. Ford Memorial Chapel,

12:30 P. M. Luncheon to Delegates.

1:30 P. M. Academic Procession.

2:00 P. M. Anniversary Exercises. President CRAWFORD presiding. Address: President WILLIAM ARNOLD SHANKLIN, D.D., Wesleyan University, representing the Colleges of America. Address: Dean CHARLES H. HASKINS, Ph.D., Harvard University, representing the Universities of America. Address: President HENRY S. PRITCHETT, LL.D., Carnegie Foundation for the Advancement of Teaching, representing Educational Foundations and Learned Societies. Address: His Excellency, M. JUSSERAND, the French Ambassador, representing the Universities of Europe. Address: Governor MARTIN G. BRUMBAUGH, representing the State of Pennsylvania. It is hoped that President WILSON will speak, representing the United States of America. Conferring of Honorary Degrees.

5:00 P. M. Informal Reception to Delegates and Guests. Cochran Hall.

7:00 P. M. Anniversary Dinner. Cochran Hall. Greek Letter Fraternity Dinners at Chapter Houses.

Thursday, June 24, 9:30 A. M. Annual Meeting of Trustees.

4:00 P. M. Historical Pageant. Third Presentation.

From 10:00 A. M. until 4:00 P. M. will be given over to informal visiting or get-togethers among alumni, students, professors, and guests.

1915.

Sept. 14, Tuesday—First Term Begins.

13, 14, Monday and Tuesday—Entrance Examinations.

14, Tuesday—Registration of New Students.

15, Wednesday—Registration of Old Students.
16, Thursday, 8:00 a. m.—Recitations Begin.
Nov. 3, Wednesday—Last Day for Submitting Subjects of Senior Orations or Theses.
25, Thursday—Thanksgiving Day, a holiday.
Dec. 17, Friday, 5:00 p. m.—Recitations Close.

CHRISTMAS RECESS.

1916.
Jan. 5, Wednesday, 8:00 a. m.—Recitations Resumed.
12, Wednesday—Last Day for Presenting Senior Orations or Theses.
Jan. 19-28—First Term Examinations.
Jan. 28, Friday, 5:00 p. m.—First Term Ends.

Feb. 1, Tuesday—Second Term Begins. Registration of Students.
2, Wednesday, 8:00 a. m.—Recitations Begin.
4, Thursday—Wakefield Oratorical Contest.
22, Tuesday—Washington's Birthday, a holiday. The College Dinner.
Mar. 2, Wednesday—Last Day for Submitting Subjects of Senior Orations or Theses.
24, Philo Franklin Oratorical Contest.
April 14, Friday, 5:00 p. m.—Recitations Close.

SPRING RECESS.

April 25, Tuesday, 8:00 a. m.—Recitations Resumed.
27, Wednesday—Last Day for Presenting Senior Orations or Theses.
May 10, Tuesday—Choice of Senior Speakers.
June 14, Commencement.

BOARD OF TRUSTEES.

Ex-Officio.

HIS EXCELLENCY MARTIN G. BRUMBAUGH,
Governor of the Commonwealth.
HON. D. NEWLIN FELL,
Chief Justice of the Supreme Court.
HON. FRANCIS SHUNK BROWN,
Attorney General.

HARVEY HENDERSON, LL.D., . . . Pittsburgh
JOHN J. HENDERSON, LL.D., . . . Meadville
THEODORE L. FLOOD, D.D., LL.D., . Meadville
REV. JOSEPH HORNER, D.D., LL.D., Pittsburgh
REV. JOSEPH W. MILES, D.D., . . Beaver Falls
JOHN C. BARDALL, . Moundsville, W. Va.
FRANK A. ARTER, ... Cleveland, O.
JAMES P. COLTER, ... Meadville
JAMES W. KINNEAR, ... Pittsburgh
GORTON B. CHASE, ... Greenville
REV. THOMAS H. WOODRING, D.D., . . Irwin
REV. ANDREW C. ELLIS, D.D., . . Meadville
REV. WILLIAM H. CRAWFORD, D.D., LL.D., Meadville
JOHN E. RIGG, M.D., . . . Wilkinsburg
EDWARD APPLEYARD, . . Jamestown, N.Y.
WESLEY B. BEST, ... Meadville
JESSE C. MCDOWELL, ... Pittsburgh
JOHN V. RITTS, ... Butler
CHARLES MILLER, ... Franklin
JOHN S. CRAIG, ... Pittsburgh
AUSTIN BLAKESLEE, ... DuBois
REV. NOBLE G. MILLER, D.D., . . Blairsville
*TRUMAN D. COLLINS, ... Nebraska
NELSON A. RIST, ... Dawson
JOHN J. CARTER, ... Titusville
REV. J. C. MACDONALD, D.D., . . Meadville

*Deceased.

ARTHUR L. BATES, ... Meadville
SIMPSON S. FORD, ... Cleveland, O.
ROBERT B. WARD, ... New York
C. E. WELCH, ... Westfield, N. Y.
BISHOP JAMES M. THOBURN, D.D., LL. D., Meadville
SARAH B. COCHRAN, ... Dawson
REV. ROBERT M. FRESHWATER, D.D., Cleveland, O.
J. A. HUSTON, ... Sewickley
GEORGE GREER, ... New Castle
BYRON A. WALKER, ... Erie
W. S. HORNER, ... Pittsburgh
REV. J. M. THOBURN, D.D., . . . Ben Avon
REV. C. W. MINER, D.D., . . . DuBois
IDA M. TARBELL, ... New York
ARTHUR W. THOMPSON, . . . Baltimore, Md.
HARRY W. DUNLAP, ... Pittsburgh
WILL N. RIDGE, ... New York
WILLIAM J. ARMSTRONG, M.D., . . . Kane
J. W. FAWCETT, M.D., . . . McKeesport

Officers of the Board.

FRANK A. ARTER, ... President
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WESLEY B. BEST ANDREW C. ELLIS

Treasurer of the College.

GEORGE D. THOMAS.

FACULTY.

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PRESIDENT,
Professor of Ethics.

WILLIAM A. ELLIOTT, A.M., L.H.D.,
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ERNEST ASHTON SMITH, Ph.D.,
Alumni Professor of History and Economics.

CLARENCE F. ROSS, A.M.,
Bradley Professor of Latin Language and Literature.
SECRETARY.

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Eliza Kingsley Arter Professor of English Language and Literature.

GEORGE A. MULFINGER, Ph.D.,
Professor of German Language and Literature.

CAMDEN M. COBERN, Ph.D., Litt.D.,*
James M. Thoburn Professor of English Bible and Philosophy of Religion.

*Absent on leave.

CHARLES J. LING, Ph.D.,
Mary M. Newton Professor of Physics and Astronomy.

OSCAR P. AKERS, Ph.D.,
Francis Asbury Arter Professor of Mathematics and Surveying.

RICHARD EDWIN LEE, Sc.D.,
Professor of Chemistry.

GUY E. SNAVELY, Ph.D.,*
Professor of Romance Languages and Literatures.
REGISTRAR.

ALICE HUNTINGTON SPALDING,
Instructor in Public Speaking.
DEAN OF WOMEN.

CHESTER A. DARLING, Ph.D.,
Professor of Biology and Geology.

CHARLES E. HAMMETT,
Professor of Physical Education and Director of Athletics.

FREDERICK G. HENKE, Ph.D.,
Acting Professor of Philosophy.

WILLIAM HOWARD WOOD, Ph.D.,
Acting Professor of English Bible.

CHARLES E. DECKER, A.M.,
Assistant Professor of Biology and Geology.

STANLEY S. SWARTLEY, A.M.,
Assistant Professor of English.

WILLIAM C. HEFFNER, Ph.D.,
Assistant Professor of Economics and Political Science.

Absent on leave, Sabbatic year.

EDITH ROWLEY, A.M.,
Librarian.

A. H. HARROP, Ph.D.,
Instructor in Greek and Latin.
ACTING REGISTRAR.

JOHN P. TRICKEY, B.S.,
Instructor in Chemistry.

KARL A. MILLER, B.S.,
Instructor in Mathematics and Surveying.

DANIEL H. G. MATTHAEI, A.B.,
Instructor in German.

ROBERT CALVIN WARD, A.M.,
Instructor in French and in Charge of Department.

ROBERT O. CONANT, A.B.,
Instructor in French.

WALTER H. FEGELY, B.S.,
Graduate Assistant in Chemistry.

HOWARD F. BROWNELL,
Laboratory Assistant in Chemistry.

M. L. WITHERUP,
Laboratory Assistant in Biology.

CHARLES A. AEY,
Laboratory Assistant in Physics.

ALICE CHAPIN,
Reader in English.

COMMITTEES OF THE FACULTY.

Registration.

THE PRESIDENT — THE REGISTRAR
PROFESSOR ROSS — PROFESSOR LEE
PROFESSOR WOOD

Courses of Study.

PROFESSOR ELLIOTT — PROFESSOR LOCKWOOD
PROFESSOR MULFINGER — PROFESSOR LING
PROFESSOR HENKE

Discipline.

THE PRESIDENT — PROFESSOR ELLIOTT
PROFESSOR SMITH

College Organizations.

PROFESSOR AKERS — PROFESSOR ROSS
PROFESSOR SMITH

Library.

PROFESSOR LOCKWOOD — PROFESSOR MULFINGER
PROFESSOR ELLIOTT

Graduate Instruction.

PROFESSOR DARLING — PROFESSOR LOCKWOOD

Athletics and Gymnasium.

PROFESSOR LEE — PROFESSOR HAMMETT
MR. WARD

Accredited Preparatory Schools.

PROFESSOR ROSS — PROFESSOR LING
PROFESSOR DARLING

College Book Store.

PROFESSOR LEE

Catalogue.

PROFESSOR ROSS — PROFESSOR SWARTLEY
PROFESSOR DECKER

College Council.

PROFESSOR LING — PROFESSOR AKERS

Men's Dormitories.

PROFESSOR SMITH — PROFESSOR HAMMETT
PROFESSOR HEFFNER

DESCRIPTION OF THE COLLEGE.

HISTORICAL SKETCH.

Allegheny College was founded in 1815 by citizens of Meadville, then a frontier village of some three or four hundred inhabitants. The first president was the Rev. Timothy Alden, a Presbyterian minister. The institution was chartered in 1817, and in 1820 the corner stone of the first building, Bentley Hall, was laid. In 1831 Dr. Alden resigned, and in 1833 the Rev. Martin Ruter, of the Pittsburgh Conference of the Methodist Episcopal Church, was elected to the presidency. The institution, while pronouncedly Christian, is conducted as the charter requires, on liberal principles, no person having any advantage, or being subjected to any disadvantage, on account of his religious views.

LOCATION.

Allegheny College is located in Meadville, Pennsylvania, on the main lines of the Erie and the Bessemer & Lake Erie railroads. An electric road gives direct connection with Erie and intervening points. Meadville has a population of more than twelve thousand. It is an old, well-established town, with attractive streets and residences, cultured society, and many educational influences. Being largely a residential town it has few of the disadvantages of city life. It has most of the advantages of a city, such as paved

streets, an effective sewerage system, an abundant supply of wholesome water from driven wells, arc and incandescent electric lights, natural gas, and an electric street railroad connecting all parts of the town with the college grounds.

The surrounding country is remarkable for its beautiful and diversified scenery. Within a short radius are some twenty miles of wild and rugged ravines of exceeding beauty, and the foothills of the Alleghenies which surround the town make the situation one of great attractiveness. The neighborhood is especially rich in material for the study of Botany and Geology.

BUILDINGS AND GROUNDS.

The college campus contains sixteen acres on the north edge of the town, nearly a mile from the business section, at an elevation of two hundred feet above French Creek and twelve hundred feet above the sea. It is abundantly shaded by numerous varieties of trees, many of them planted by students nearly a century ago. The ravine which passes through the campus and the situation overlooking the town and the valley for miles below, give a natural beauty hardly surpassed. The grounds are well provided with granolithic walks, and both grounds and buildings are kept in an attractive and sanitary condition.

The heating plant, situated in the upper ravine, supplies steam heat to all the college buildings. It is entirely adequate to the needs of the College.

Bentley Hall bears the name of the Rev. William Bentley, D.D., of Salem, Massachusetts, who gave his valuable library to the College. The corner stone

was laid in 1820. It consists of a central three-story building with tower, and two wings with massive pillars. The building contains the administration offices of the College and recitation and lecture rooms. The third floor is devoted to the halls of the literary societies with their libraries.

During the summer of 1905 extensive improvements were made in the interior of the building. New hard wood floors and oak wainscoting were put in, and new furniture throughout has been provided. These changes, made at a cost of about seven thousand dollars, have rendered the building very attractive and entirely modern, without lessening its charm as a fine example of colonial architecture.

Ruter Hall, which bears the name of the Rev. Martin Ruter, D.D., the second president of the College, is a substantial brick building, erected in 1855, chiefly by the citizens of Meadville. On the first floor is the geological museum of the College. On the second floor are recitation rooms, a drawing room, an instrument room, and an office, used by the department of Mathematics and Surveying, and a lecture room for Biology. The third floor, occupied by the department of Biology and Geology, contains a general laboratory, two advanced laboratories, two offices and a store room.

Hulings Hall, a four-story brick building, ninety-four by one hundred forty feet, was erected in 1881, by Mr. Marcus Hulings, of Oil City, and citizens of Meadville. It is used as a home for young women, and accomodates about eighty. The building is well lighted and ventilated, is provided with fire escapes, and is in thoroughly good sanitary condition. It has

recently been almost entirely refurnished. The rear wing of the building contains on the fourth floor five large society halls; the first and second floors are occupied by the gymnasium for young women. The gymnasium has a clear floor space fifty-four by forty feet and is finished throughout in Georgia pine. It is provided with a full line of modern apparatus. In the basement are dressing rooms and baths.

Wilcox Hall of Science, named for Mr. and Mrs. Robertson Wilcox, of Girard, Pa., is a modern brick building built in 1892 for the department of Physics. It contains an amphitheatre lecture-room, seating one hundred students, physical laboratories, and a basement work shop. There are ten working rooms. In the construction of the building especial care was taken to provide abundant light.

The Gymnasium, erected in 1896, adjoins the athletic field. It is in the early Italian style of round arched architecture, and is constructed of native stone and brick. The building is T-shaped in plan, the front portion being two stories high, exclusive of the tower. The first floor contains the director's room, locker rooms, and baths. On the second floor there is an assembly room, and also a committee room, both for general use. The gymnasium floor, which occupies the rear extension, has a clear space of forty-five by eighty feet unobstructed by pillars, the roof being supported by steel trusses. The building is equipped with the appointments of a first-class modern gymnasium.

Newton Observatory, completed in 1901, was made possible by the gift of Mrs. Mary M. Newton, of Batavia, Illinois, in memory of her husband, Captain D.

C. Newton, once a student in the College. It is a rock-faced stone building of fine architectural appearance, containing in addition to the observing room, a transit room, a computing room, and the director's office.

Ford Memorial Chapel was erected in 1901-2 through the generosity of Captain John B. Ford, of Creighton, Pa., in memory of his wife. The cost of the building was $34,000. It is of rock-faced Cleveland sandstone, in Gothic Romanesque style, with a spacious auditorium seating four hundred fifty, besides a gallery seating one hundred fifty, and an oratory seating one hundred fifty. The rich stained glass windows and the harmonious interior appointments add much to the stateliness of the building.

The chapel is provided with a splendid pipe organ, the gift of the granddaughters of Captain Ford, Mrs. J. A. Ballantyne and Misses Nellie and Stella Ford, who contributed $6,000 for this purpose. The organ was designed by Mr. W. L. Mayer, of Pittsburgh, and was built by the late Julius Neef, of Philadelphia. It has three manuals and 1,920 pipes, and is supplied with the best devices of great modern organs.

The Library Building, the gift of an anonymous donor, was completed in 1902 at a cost of over $40,000. Its dimensions are eighty-five by seventy-four feet. It is constructed of vitrified brick with terra cotta trimmings, in Italian-Renaissance style. In addition to the stack room with a capacity of sixty thousand volumes, it contains a cataloguing room, librarian's rooms, general reading room, and a large reference reading room. On the second floor are the faculty room and the department seminar rooms. The interior

appointments of the library are entirely in accord with the artistic character of the building.

Alden Hall. This building is one of the latest additions to the group of college buildings, and is devoted to the use of the department of chemistry. It is constructed of gray vitrified brick and terra cotta, in English school style, with three floors and a basement. The building is commodious and well lighted. It contains ten rooms, and is well equipped with such apparatus as is necessary to the successful prosecution of work in the department.

(*The burning of Alden Hall led the trustees to see the importance of an up-to-date fire-proof building for the Department of Chemistry. Such a building is to be forthwith provided. Mr. Andrew Carnegie has agreed to give* $40,000 *with the understanding that* $10,000 *of the insurance is to be added to it, thus making a* $50,000 *building. Mr. Carnegie's gift is conditioned on the raising of* $20,000, *the income of which is to be used for the maintenance of the building. The trustees have accepted this generous offer and are undertaking to raise* $20,000 *among themselves to meet the condition. A Building Committee has been appointed, and an architect selected. It is confidently expected that the new building will be ready for occupancy at the opening of the next college year in September. This will give the college a* $70,000 *plant for chemistry, not counting the furnishings or equipment, which will amount to approximately* $15,000.

Since the burning of Alden Hall the trustees have decided to rebuild and greatly enlarge it for the Department of Biology and Geology. The work of reconstruction has already begun and the building is to be completed by September.)

Cochran Hall. By the generous gift of Mrs. Sarah B. Cochran, of Dawson, Pa., amounting to over sixty thousand dollars, provision has been made for a College Commons for young men. The building is constructed of brick, with light terra cotta trimmings and tile roof. The architecture is of the Italian villa style with simple dignified lines, making the building, as a whole, the most imposing of the entire college group. The building contains on the first floor a reception hall, a main dining room, and a large lounging room for general purposes. The second floor is devoted to students' studies, sleeping rooms, and baths, and to a guests' suite. The building not only provides first class boarding accommodations, and at reasonable rates, but also constitutes a rallying center for the young men of the College. Apart from the dining room and the provisions for a dormitory, there are rooms for the Young Men's Christian Association, which are admirably adapted to their purpose. In addition to the spacious room to be used as assembly, reading, and social room there are an office for the secretary, a committee room, and a cloak room. Just off these apartments are four bowling alleys with shuffle board spaces adjoining.

LABORATORIES AND MUSEUM.

The Physical Laboratory. The department of Physics occupies Wilcox Hall of Science. It comprises a large, well-lighted lecture-room; a general laboratory; special laboratories for heat, light, and electricity; two dark rooms; the professor's office; and department library and store room. The lecture-room is well adapted to the giving of illustrated lectures; and

the department has a very complete projection outfit and a good collection of slides. The department has also the facilities for the construction of special pieces of apparatus needed in the laboratory.

The Chemical Laboratories. The department of Chemistry occupies the building known as Alden Hall. It consists of ten rooms and is devoted in its entirety to the uses of this department. On the first floor are located the private office and the laboratory of the head of the department, balance room, laboratory for quantitative and gas analysis, reading room containing the department library, and a large, well-ventilated lecture-room with complete equipment for experimental and illustrated lectures. On the second and third floors are found separate laboratories for general chemistry, organic chemistry, analytical chemistry, physical chemistry, and a dark room for photo-chemistry. In the basement are located the store room and laboratory preparation room.

All the laboratories are well lighted and ventilated, and amply provided with facilities for various kinds of chemical work.

The Astronomical Observatory is equipped with a nine-inch equatorially mounted telescope, the objective of which was a gift of Mr. J. C. McDowell, of Pittsburgh, and was made by Brashear, of Allegheny, Pa. The graduated silver circles for this telescope were given by Mrs. Elizabeth Whiting, of Meadville. A seven and one-half inch instrument, made by Alvin Clark and Son, is also included in the equipment. Other equipment includes a transit, a chronometer, a sextant, and a sidereal clock. The clock is the gift of the children of Milton B. Goff, LL. D., in memory of

their father, an alumnus and former professor of mathematics in the College. The mountings and other fixtures of the observatory were supplied by Messrs. Warner and Swasey, Cleveland, O.

Through the generosity of Colonel J. J. Carter, of Titusville, Pa., there has been added to the equipment of the observatory an elaborate filar micrometer for use with the nine-inch, designed and made by George N. Saegmuller, of the Bausch-Lomb-Saegmuller Co., of Rochester, N. Y. From the same source comes a high grade six-inch mining transit fitted with a Saegmuller solar attachment and a Shattuck solar attachment, thus enabling the department to prosecute field work in astronomy which is of value to engineers. A chronograph, made by Gaertner, of Chicago, and a break circuit attachment for the clock complete the new equipment, which will enable the department to offer to the student work that will be comparable with other observatories having a glass of like magnitude.

Engineering Apparatus. In Mathematics and Engineering all necessary instruments, such as transits, levels, rods, and chains, for illustrating pure and applied mathematics are provided and are in practical use by the students in these subjects.

The Biological Laboratories are placed on the third floor of Ruter Hall. The main laboratory receives direct north light and is fitted with tables and microscopes. In the same room are placed an aquarium table with running water, other tables for balanced salt and fresh water aquaria, and cases containing the herbarium and other laboratory materials. The herbarium is being rapidly built up with characteristic

specimens of the local flora, including the flowering plants and fungi. The south half of the third floor is divided into two laboratories, two offices and a store room. The laboratories are well equipped for advanced work in the various lines of Biology. The equipment consists of several new microscopes with ten oil immersion objectives, microtomes, incubators for both Bacteriology and Embryology, autoclave, sterilizers, apparatus for use in soil work, numerous charts, models, etc.; also demonstration material, including injected and prepared specimens and life histories of the various economic insects. Special lockers and drawers are provided for the use of advanced students. A new balopticon with several hundred lantern slides has been placed in the lecture room on the second floor. The library, consisting of several hundred well-selected volumes, is kept in the laboratories.

The Geological Laboratory is in connection with the biological laboratories. The equipment for geological and mineralogical work consists of several hundred topographic maps and geologic folios, minerals and rocks both for demonstration and for working collections, a complete set of crystal models, a fine polarizing microscope, some rock slides, and a collection of fossils arranged in order of the geologic periods. This collection has been augmented materially by the gift of fossils from Montana by Walter M. Small and by the gift and exchange of fossils by C. E. Decker. The geological library consisting of government, state, and other publications is placed in the laboratories.

THE LIBRARY.

The Library contains over 40,000 printed productions, of which 30,000 are bound volumes. The re-

mainder is made up of unbound periodicals and classified pamphlets. The additions by gift and purchase during 1913-14 were over 2000 volumes. A large number of reference books of a general and technical nature were added to the good collection in the reference room, where 2000 volumes of books "reserved" for use in the various departments are shelved with the dictionaries, encyclopaedias, and general reference works. A dictionary card catalogue, and periodical and government document indexes make the general resources and the latest periodical information easily available. Especial attention has been given to completing the bound sets of the most valuable periodicals. The departments of Chemistry, Physics, Biology, Geology, and Astronomy have their several department libraries in the buildings where the work is done, and additions are made to these collections each year. The Library possesses many rare old books from the Winthrop, Thomas, and Bentley foundations and a number of valuable old Bibles.

The following moneys have been given to create funds for the support of the Library:

Andrew Carnegie Fund ..... $25,000.
The income of this fund is to be used for general maintenance.

Lucy Prindle Foote Fund ..... 5,000.
A gift of Mrs. Lucy P. Foote, of Batavia, Ill., the income to be used for the purchase of books.

William Davis Memorial Fund ..... 5,000.
A gift of Mr. Henry L. Davis, of Philadelphia, Pa., in memory of his father, Mr.

William Davis, the income to be used for the purchase of books.

Rev. Lynn Olin Mead Fund ..... 500.

A gift of Mrs. Martha S. Mead in memory of her late husband, the Rev. Lynn Olin Mead, the income to be used for the purchase of books.

The Library is housed in a modern building with large reading and study rooms, fitted with electric lights and steam heat. The administration aims to make the Library not only an auxiliary to the class instruction but also the center of the intellectual life of the College. The classical and literary clubs have headquarters in the building, and rooms are set aside for advanced classes studying along special lines; the rules are such as will allow the widest use of the books with only such necessary restrictions as will secure the greatest good to the greatest number. The reading room regularly receives over one hundred periodicals, including technical department journals and dailies from the great cities and the best weeklies, both religious and secular. In addition to a very comprehensive list of the best home and foreign periodicals, the Campus and the Literary Monthly maintain an exchange table of college publications.

The Library is a government depository and also receives the state publications. Each department has an annual appropriation for the purchase of the latest technical and reference works. The access to such a wide range of books and periodicals, the training in the use of catalogues, bibliographies, reference works, and the wide range of technical and general periodical literature available are of great advantage

to the student. A book service is maintained with the Carnegie Library of Pittsburgh by which almost any book not available here may be secured quickly and at slight expense to the student. Exchange relations are also maintained with several other libraries. The Meadville Theological School extends library privileges to this College, and the students have access to the Meadville Public Library, containing over 12,000 catalogued volumes.

The Library is open during the college year from 8 a. m. to 5:30 p. m. and three evenings a week.

GENERAL PURPOSE.

This institution is a college, not a university. It therefore does not undertake to fit the student to enter any profession without further technical study. In all departments of instruction the end sought is not specialization but thorough discipline and correct habits of observation and reflection. It is on this principle that the curricula are based. Under the various groups about three-fourths of the subjects are prescribed. These studies are such as have been found to be best adapted to secure symmetrical development. A wide range of electives is offered, enabling the student to lay the foundation for subsequent professional study. By a wise choice of electives a student may in some cases shorten by a year the time required to complete his professional course. The experience of the college proves that its graduates are enabled to distinguish themselves in various careers whenever they have added to their college training the special equipment for a profession.

A large portion of college graduates enter not upon professional but upon business life. The general principle above stated applies to them with as much force as to those who enter professions. A college training does not teach a man how to do business successfully, but it does prepare him to do business rapidly, and to attain large success, if he has the requisite talent.

REQUIREMENTS FOR ADMISSION.

The requirements for admission are stated in terms of units. *A unit is defined as a course of study that has been pursued for a school year of at least thirty-six weeks, with four or five periods per week of not less than forty minutes each. However, not less than one hundred twenty periods of sixty minutes each or their equivalent shall be counted a unit. But it is understood that in the major subjects for entrance five periods a week will be required.*

No science subject may be credited for entrance unless accompanied by satisfactory evidence of laboratory or field work. Exception may be made in the case of physiology.

Subjects accepted for entrance:

	Minimum.	Maximum.
English	3	4
Mathematics	2	4
Foreign Language	4	7
Latin		
Greek		
French		
German		

Not less than two units in any language will be counted, unless continued further in college.

History	1	4
Ancient	..	1
Mediaeval and Modern	..	1

English	½	1
United States	½	1
Civics	..	½
Drawing		
Free Hand	..	½
Mechanical	..	½
Science	1	4
Biology	½	1½
Chemistry	..	1
Physics	..	1
Physiography	..	½
Geology	..	½

Not more than one unit of Biology may consist of General Zoology or Botany. Physiology may count as much as one half unit.

From the preceding list of units 15 must be offered for entrance to the freshman class. Of these, 11 units are absolutely required and 4 may be elected from any of the units in the foregoing list.

The 11 required units are as follows:

English	3
Mathematics	2
Science	1
History	1
Foreign Language	4

For admission to Groups I. and II., these 4 units must be in Latin; to Groups III. and IV., two units must be in Latin; to Groups V., VI., VII., and VIII., there is no restriction concerning Latin.

The various groups are described on pp. 46, 47, 50.

For conditional admission in the aforementioned Latin prerequisite see page 79.

DESCRIPTION OF UNIT REQUIREMENTS.

ENGLISH. The following is a definition of units one, two, three, and four, respectively, that may be offered as entrance credits in English:

(Unit one) Composition and Rhetoric.

(Units two and three) Selections from the list of required Readings below.

(Unit four) A history of English or American literature, with additional readings from the English classics.

The study of English in school has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

Grammar and Composition. The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, sentences, and paragraphs should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise letter-writing, narration, description, easy exposition, and argument. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of using good English in his recitations and various exercises, whether oral or written.

Literature. The second object is sought by means of two lists of books, headed respectively Reading and Study, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages both in

verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads and with their place in literary history.

(A.) Reading. The aim of this course is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from each of which at least two selections are to be made, except as otherwise provided under Group I.

GROUP I. Classics in Translation. The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther. The Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII. The Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI. The Aeneid. The Odyssey, Iliad and Aeneid should be read in English translations of recognized literary excellence. For any selection from this group a selection from any other group may be substituted.

GROUP II. Shakspere. Midsummer Night's Dream, Merchant of Venice, As You Like It, Twelfth Night, The Tempest, Romeo and Juliet, King John, Richard II, Richard III, Henry V, Coriolanus, *Julius Cæsar, *Macbeth, *Hamlet.

*If not chosen for study under B.

GROUP III. Prose Fiction. Malory: Morte d'Arthur (about 100 pages); Bunyan: Pilgrim's Progress, Part I; Swift: Gulliver's Travels (voyages to Lilliput and to Brobdignag); Defoe: Robinson Crusoe, Part I; Goldsmith: Vicar of Wakefield; Frances Burney: Evelina; Scott's novels, any one; Jane Austen's novels, any one; Maria Edgeworth: Castle Rackrent, or the Absentee; Dickens' novels, any one; Thackeray's novels, any one; George Eliot's novels, any one; Mrs. Gaskell: Cranford;

Kingsley: Westward Ho! or Hereward the Wake; Reade: The Cloister and the Hearth; Blackmore: Lorna Doone; Hughes: Tom Brown's Schooldays; Stevenson: Treasure Island, or Kidnapped, or Master of Ballantrae; Cooper's novels, any one; Poe: Selected Tales; Hawthorne: The House of the Seven Gables, or Twice Told Tales, or Mosses from an Old Manse; a collection of short stories by various standard writers.

GROUP IV. Essays, Biography, etc. Addison and Steele: The Sir Roger de Coverley Papers, or Selections from The Tatler and Spectator (about 200 pages); Boswell: Selections from the Life of Johnson (about 200 pages); Franklin: Autobiography; Irving: Selections from the Sketch Book (about 200 pages), or Life of Goldsmith; Southey: Life of Nelson; Lamb: Selections from the Essays of Elia (about 100 pages); Lockhart: Selections from the Life of Scott (about 200 pages); Thackeray: Lectures on Swift, Addison, and Steele in the English Humorists; Macaulay: any one of the following essays: Lord Clive, Warren Hastings, Milton, Addison, Goldsmith, Frederick the Great, Madame d'Arblay; Trevelyan: Selections from the Life of Macaulay (about 200 pages); Ruskin: Sesame and Lilies, or Selections (about 150 pages); Dana: Two Years Before the Mast; Lincoln: Selections, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, the Letter to Horace Greeley, together with a brief memoir or estimate of Lincoln; Parkman: The Oregon Trail; Thoreau: Walden; Lowell: Selected Essays (about 150 pages); Holmes: The Autocrat of the Breakfast Table; Stevenson: An Inland Voyage and Travels with a Donkey; Huxley: Autobiography and selections from Lay Sermons, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; a collection of essays by Bacon, Lamb, DeQuincey, Hazlitt, Emerson, and later writers; a collection of letters by various standard writers.

GROUP V. Poetry. Palgrave's Golden Treasury (First Series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper. and Burns; Palgrave's Golden Treasury (First Series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study under B); Goldsmith: The Traveler, and The Deserted Village; Pope: The Rape of the

Lock; a collection of English and Scottish ballads, as, for example, some Robin Hood ballads, The Battle of Otterburn, King Estmere, Young Beichan, Bewick and Grahame, Sir Patrick Spens, and a selection from later ballads; Coleridge: The Ancient Mariner, Christabel, and Kubla Khan; Byron: Childe Harold, Canto III or IV, and The Prisoner of Chillon; Scott: The Lady of the Lake, or Marmion; Macaulay: The Lays of Ancient Rome, The Battle of Naseby, The Armada, Ivry; Tennyson: The Princess, or Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Browning: Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus"—, Instans Tyrannus; Arnold: Sohrab and Rustum, and The Forsaken Merman; Selections from American Poetry, with special attention to Poe, Lowell, Longfellow, and Whittier.

(B.) Study. This part of the requirements is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. The books provided for study are arranged in four groups, from each of which one selection is to be made.

GROUP I. Drama. Shakspere: Julius Cæsar, Macbeth, Hamlet.

GROUP II. Poetry. Milton: L'Allegro, Il Penseroso, and either Comus or Lyciadas; Tennyson: The Coming of Arthur, The Holy Grail, and The Passing of Arthur; the selections from Wordsworth, Keats, and Shelley in Book IV of Palgrave's Golden Treasury (First Series).

GROUP III. Oratory. Burke: Speech on Conciliation with America; Macaulay: Two Speeches on Copyright and Lincoln's Speech at Cooper Union; Washington: Farewell Address and Webster: First Bunker Hill Oration.

GROUP IV. Essays. Carlyle: Essay on Burns, with a selection from Burns' Poems; Macaulay: Life of Johnson; Emerson: Essay on Manners.

Examination. However accurate in subject-matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling, or other essentials of good usage.

The examination will be divided into two parts, one of which will be on grammar and composition, and the other on literature.

In grammar and composition, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors. The main test in composition will consist of one or more essays, developing a theme through several paragraphs; the subjects will be drawn from the books read, from the candidate's other studies, and from his personal knowledge and experience quite apart from reading. For this purpose the examiner will provide several subjects, perhaps eight or ten, from which the candidate may make his own selections. He will not be expected to write more than four hundred words per hour.

The examination in literature will include

(A.) General questions designed to test such a knowledge and appreciation of literature as may be gained by fulfilling the requirements defined under (A.) Reading, above. The candidate will be required to submit a list of the books read in preparation for the examination, certified by the principal of the school in which he was prepared; but this list will not be made the basis of detailed questions.

(B.) A test on the books prescribed for study, which will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

MATHEMATICS.—Elementary Algebra. (One unit or one and one half units.) The work in this subject should include the following: fundamental operations, factors, common divisors and multiples, involution including the binomial theorem for positive integral exponents, radicals, quadratic equations, ratio and proportion, theory of exponents, and arithmetic and geometric series.

A maximum of one and one half units may be given when the time spent in preparing to meet this requirement be at least a year and a half. It is suggested that the work of the last half-year should be done late in the preparatory school course to insure a distinct and ready articulation with the required work of the freshman year in college. It is desirable that the student should come to his college work with well formed habits of neatness and accuracy, and that he have a ready knowledge of so much mathematics as he may have studied.

Plane Geometry. (One unit.) The general properties of rectilinear figures, similar polygons, and areas, and the measurement of polygons and the circle; the solution of original exercises, including loci problems.

Solid Geometry. (One half unit.) The relation of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, cones, and the sphere; the solution of original exercises, including loci problems.

Advanced Algebra. (One half unit.) A somewhat more extended treatment in review of the important topics of Elementary Algebra; such as fractional and negative exponents, radicals, factoring, the theory of quadratic equations (including maximum and minimum, and simultaneous quadratic equations, ratio, proportion, the progressions, and the binomial theorem for positive integral exponents). In addition to these, the following topics should be included: permutations and combinations, undetermined coefficients, partial fractions, logarithms, theory of equations, including Horner's method, and the solution of numerical equations of higher degree.

Plane Trigonometry. (One half unit.) The definitions and relations of the six trigonometric functions as ratios, proofs of formulas, especially those for the sine, cosine, tangent

of the sum or difference of two angles, the relation between functions of an angle and those of double angles and half angles, inverse functions, and the solution of right and oblique triangles with applications.

LATIN.—The following requirements, as proposed by the Commission on College Entrance Requirements in Latin, have been adopted by the College:

I. AMOUNT AND RANGE OF THE READING REQUIRED.

1. The Latin reading required of candidates for admission to College, without regard to the prescription of particular authors and works, shall not be less in amount than Cæsar, Gallic War, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneid, I-VI.

2. The amount of reading specified above shall be selected by the schools from the following authors and works: Cæsar (Gallic War and Civil War) and Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust, (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid) and Ovid (Metamorphoses, Fasti, and Tristia).

II. SUBJECTS AND SCOPE OF THE EXAMINATIONS.

1. Translation at Sight. Candidates will be examined in translation at sight of both prose and verse. The vocabulary, constructions, and range of ideas of the passages set will be suited to the preparation secured by the reading indicated above.

2. Prescribed Reading. Candidates will be examined also upon the following prescribed reading: Cicero, orations for the Manilian Law and for Archias; and Vergil, Aeneid, I, II, and either IV or VI at the option of the candidate, with questions on subject-matter, literary and historical allusions, and prosody. Every paper in which passages from the prescribed reading are set for translation will contain also one or more passages for translation at sight; and candidates must deal satisfactorily with both these parts of the paper, or they will not be given credit for either part.

3. **Grammar and Composition.** The examinations in grammar and composition will demand thorough knowledge of

all regular inflexions, all common irregular forms, and ordinary syntax and vocabulary of the prose authors read in the school, with ability to use this knowledge in writing simple Latin prose. The words, constructions, and range of ideas called for in the examinations in composition will be such as are common in the reading of the year, or years, covered by the particular examination.

The credits given are as follows: Elementary Latin Book, such as Collar and Daniell or Bennett, including the reading of at least fifteen pages of easy connected prose, such as Viri Romæ, one unit; Cæsar with composition, one unit; Cicero with composition, one unit; Vergil, one unit.

GREEK.—(One unit.) First Greek Book and at least six chapters of Book I of Xenophon's Anabasis.

(One unit.) Xenophon's Anabasis through Book IV. Xenophon's Anabasis, Books V, VI, and VII, or Xenophon's Hellenika, Books I and II, or twelve hundred lines of Homer. Prose composition based on the texts read.

(One unit.) Homer's Iliad or Odyssey, about three thousand lines. Thorough knowledge of poetic forms and prosody. About thirty pages of Attic prose with composition based thereon.

Throughout the work in Greek, emphasis should be laid on accurate knowledge of forms and the ordinary rules of syntax, on the ability to read Greek aloud correctly and expressively, and on the ability to write rapidly and correctly in Greek simple English sentences based on the texts read.

Student expecting to enter Greek I in College should offer at least two units of entrance Greek. Students without Greek for entrance may begin the subject in Greek A and in one year be prepared to enter Greek I.

GERMAN.—(One unit.) The first year's work should comprise: careful drill in pronunciation, dictation, memorizing of easy colloquial sentences, drill in the rudiments of grammar, i. e., the inflection of nouns, adjectives, pronouns, weak verbs, and the more usual strong verbs; the use of prepositions; the simplest rules of syntax and word order; simple exercises

in conversation; and the reading of from seventy to one hundred pages of a graduated text from a reader or from editions of easy texts.

(One unit.) The second year's work should comprise: the reading of one hundred fifty to two hundred pages of literature in the form of easy stories and plays; a further study of syntax; conversation based on the text read; practice in the translation into German of easy variations upon the matter read, and also in off-hand reproduction, sometimes orally and sometimes in writing, of the substance of selected passages.

(One unit.) The work of the third year includes, in addition to the courses above, the reading of about four hundred pages of moderately difficult prose or poetry, with constant practice in giving, sometimes orally, sometimes in writing, abstracts, paraphrases, or reproductions from memory of selected portions of the matter read; also grammatical drill upon the less usual strong verbs, the use of the article, and the cases, the uses of the subjunctive and the infinitive, complex sentence structure, and the uses of modal auxiliaries and participial constructions.

(One unit.) The fourth year of the study should be devoted to such works as Goethe's Iphigenie, Tasso, Hermann und Dorothea, Schiller's Wallenstein, standard prose of the grade represented by Freytag or Keller, some consideration of the chief lyric poets, prose composition, and some practice in theme writing.

FRENCH.—(One unit.) First year French should comprise the following: (1) Careful drill in pronunciation, which should be re-enforced by dictation and conversation in the class-room. (2) Study of Grammar, including the more unusual irregular verbs; such as the material found in Part I of Fraser and Squair's French Grammar. (3) Regular practice in putting simple idiomatic sentences into French. (4) Reading of about two hundred duodecimo pages of easy standard French, such as is to be found in the more popular French Readers, Malot's Sans Famille, Bruno's Tour de la France, the stories of Erckmann-Chatrian, etc.

(One unit.) Second year French should include: (1)

Continued work in dictation. (2) Memorizing of short poems. (3) Further practice of turning English into idiomatic French. (4) More detailed study of grammar, such as is contained in Fraser and Squair, Part II. (5) Reading of some three hundred pages of standard French of gradually increasing difficulty, such as the stories and plays of About, Daudet, Labiche, Mérimée, Sand, Scribe, etc.

(One unit.) Third year French should comprise the reading of some five hundred pages of more difficult French, including some masterpieces of French drama. Moreover, the student should be able to reproduce and paraphrase into idiomatic French parts of the works read. Texts should be selected from the works of Balzac, Beaumarchais, Corneille, Hugo, Marivaux, Molière, Musset, Racine, Vigny, Voltaire, etc.

ANCIENT HISTORY.—(One unit.) To the fall of the Roman Empire. Texts—Botsford, West, Myers.

MEDIAEVAL AND MODERN.—(One unit.) Texts—Myers, Robinson.

ENGLISH HISTORY.—(One half or one unit.) Texts—Cheyney, Larned.

AMERICAN HISTORY.—(One half or one unit.) Texts—Channing, Fiske, McMaster.

CIVICS.—(One half unit.) Texts—Fiske, Hart.

FREE HAND DRAWING.—(One half unit.) The candidate must possess the ability to sketch, both in outline and with shading, simple objects such as a house, a small piece of machinery, a simple landscape, a group of geometrical figures, or an architectural ornament.

Certificates covering the above work, together with at least twenty specimen drawing, will be accepted.

MECHANICAL DRAWING.—(One half unit.) The candidate must be able to make projections in plan and elevation of geometrical figures, and to prepare working drawings of simple architectural and mechanical subjects.

Certificates covering this work, together with at least

twenty plates, illustrating the elements of Descriptive Geometry or of simple machine parts, will be accepted.

BIOLOGY.—Courses in Zoology, Botany, Physiology and Hygiene will also be accepted under this head provided they meet the requirements here given. Satisfactory outlines of courses are given in the syllabus published by the N. Y. State Educational Department.

a. (One unit.) A course in General Biology extending throughout a year which shows the fundamental relationship between the animal and plant kingdoms and shows man's place in nature. A part of this course may deal with human physiology. The course must be accompanied with laboratory work and the student must be prepared to submit a laboratory notebook properly certified if required to do so.

b. (One half to one unit.) Courses in General Zoology or General Botany of at least one half year in length. It is recommended that these be courses which deal with habits and ecological relationships as well as structure. Forms of animals or plants of local or of economic importance should be used as type forms as far as possible. Courses in Botany dealing solely with the flowering plants or courses in Zoology dealing solely with birds or insects will not be accepted. Laboratory work will be required in all cases and the student must be prepared to submit a properly certified note-book.

c. (One half unit.) Physiology and Hygiene. This must be a one half year course, and it is recommended that laboratory work be done with the course.

GEOLOGY.—(One half unit.) The materials of the earth, the work of the atmosphere, ground-water, running water, snow and ice, the oceans and lakes, vulcanism and diastrophism; rock structures; the history of the geologic periods from the Archæozoic to the present.

Laboratory. Two hours per week for half a year. The common rock-forming minerals; the classification or rocks; topographic maps and geologic folios illustrating the geologic processes and the distribution, nature, and structure of rocks of the different periods; the fossil plants and animals most

typical of each period. Norton's Elements of Geology or Brigham's Text-book of Geology.

PHYSIOGRAPHY.—(One half unit.) The origin and significance of the great relief features of the earth, and the topographic forms of the land; the earth as a planet; the atmosphere; the climate; weather predictions. Appropriate field and laboratory work must accompany the study of the text. Suitable text books are Salisbury's Briefer Course in Physiography, Gilbert and Brigham's or Dryer's Physical Geography.

CHEMISTRY.—(One unit.) The candidate's preparation in Chemistry should include: (a) The study of at least one standard text-book on General Chemistry, to the end that the pupil may obtain a comprehensive view of the more important facts of Elementary Chemistry. (b) Individual laboratory note-books, certified by the candidate's instructor, must be presented.

PHYSICS.—(One unit.) The amount and extent of the class work demanded for entrance in physics may be indicated by such tests as Millikan and Gale's First Course, Hoadley's Elements, or Carhart & Chute's High School Physics. In laboratory the work should include at least thirty quantitative experiments supplementing the class work, performed by the student, and recorded in a carefully prepared note-book.

ADMISSION WITH CONDITIONS.

Students who have not fully completed the subjects specified for the course they wish to enter may be admitted to the freshman class conditionally, but not if the sum of their deficiencies exceeds a half year's work, nor if in the judgment of the Registration Committee they are not fitted to do college work to advantage. They will be admitted to such college classes as they may be qualified to enter. Under certain fixed restrictions, credit may be obtained on entrance for work done in college subjects and such advanced credit may be offset against deficiencies in preparatory work until the latter can be removed.

SPECIAL STUDENTS.

Persons desiring to pursue studies in the College are, as a rule, required to be prepared to enter the freshman class as candidates for one of the degrees. Under exceptional circumstances, however, persons who are not candidates for a degree may be admitted as special students and allowed to pursue selected studies. Every such person will be required to satisfy the Faculty that he is prepared to do, with profit, the work which he selects. Each case will be decided on its own merits.

ENTRANCE EXAMINATIONS.

Examinations for admission are held on Monday and Tuesday of Commencement week, and on Monday and Tuesday preceding the opening of the First Term.

All examinations except those taken in Meadville are under direction of the College Entrance Examination Board, whose certificates are accepted in all subjects in place of examinations.

ADMISSION BY CERTIFICATE.

In place of examinations in studies required for admission to College, certificates will be accepted from approved high schools having a regular four years' course, in case of students regularly graduating in such a course. Certificates will also be accepted in case of graduates of a three years' high school course, provided they pass entrance examinations in not less than three units additional to their certificate.

Certificates will not be accepted in case of students who are not graduates of the school from which the certificates are presented. *Students entering by*

certificate are considered as on trial until the completion of the mid-year examination, and the right is reserved to require further preparatory work from students who are not able to make satisfactory progress in college classes.

In all cases an examination in English is required adapted to test the student's power of correct and idiomatic expression. No one will be accepted in English whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs.

Principals of schools desiring to have their schools placed on the approved list are invited to address the President of the College.

Diplomas from the Regents of the State of New York will be accepted. All other certificates must be made out on special blanks, which will be sent on application.

The applicant for admission should also bring with him all laboratory note-books, exercise books, and other evidence of work done, properly certified to by the teacher.

All candidates for admission must present satisfactory testimonials of good moral character; and certificates of regular dismission will be required from those who have been matriculated at other institutions.

Requirements for Graduation to the Degree of Bachelor of Arts.

FRESHMAN YEAR.

	First Term.	Second Term.
English I.	3	3
English Bible I.	1	1
*Mathematics or Science	4	4

One course from each of two of the following departments: Latin, Greek, French, German.

These two courses will count as part of the student's Group Electives as detailed on pp. 46, 47.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For Group I. he should choose Latin and Greek.

For Group II. he should choose Latin or Greek, and German or French.

For Group III. he should choose French and German.

For Group IV., if he is to do his major work in History, he should choose History and Latin or Greek or French or German. If he is to do his major work in English, he may choose any two of the subjects.

Not less than fifteen and not more than sixteen hours are to be taken weekly.

*Candidates for the degree of Bachelor of Arts are required to elect fourteen term hours from the following courses: Astronomy I, Biology I, Chemistry I, Geology II, Mathematics I, Physics I.

SOPHOMORE YEAR.

	First Term.	Second Term.
Mathematics or Science	4 or 3	4 or 3
History or Political Science	3	3

Group Electives [See pp. 46, 47] to make not less than fifteen and not more than seventeen hours weekly.

JUNIOR YEAR.

	First Term.	Second Term
Philosophy I., II.	3	3

This subject may be taken in the sophomore year if the student is to his major work in philosophy.

Group Electives and Free Electives to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis the first term and an oration the second term. See page 91.

Group Electives and Free Electives chosen from the list on pages 93-95 to make a total for the course of not less than one hundred twenty term hours.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of Groups I., II., III., IV., in which his work is to be done.

The head of the department in which the major work is done becomes the student's adviser. See page 103.

Group I.

1. In one department, Greek or Latin ..... 20 hrs.
2. In a second department, Latin or Greek..... 14 hrs.
3. In a third department, English, History, Philosophy, French, or German..... 14 hrs.
4. In a fourth department, English, History, Philosophy, French, or German ..... 6 hrs.

Group II.

1. In one department, Latin or Greek.....20 hrs.
2. In a second department, French or German.....14 hrs.
3. In a third department, English, History, Philosophy, Latin, Greek, French, or German.....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin, Greek, French, or German..... 6 hrs.

Group III.

1. In one department, French or German.....20 hrs.
2. In a second department, German or French.....14 hrs.
3. In a third department, English, History, Philosophy, Latin, or Greek .....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin, or Greek ..... 6 hrs.

Students who present for admission less than two units in a modern language must, if this Group is chosen, take not less than eight hours additional to the above requirements, in the language chosen for the major subject.

Group IV.

1. In one department, English, History, or Philosophy.20 hrs.
2. In a second department, English, History, or Philosophy .....14 hrs.
3. In a third department, Latin, Greek, French, or German .....14 hrs.
4. In a fourth department, Latin, Greek, French, or German ..... 6 hrs.

Requirements for Graduation to the Degree of Bachelor of Science.

FRESHMAN YEAR.

	First Term.	Second Term.
English I.	3	3
English Bible I.	1	1
Foreign Language: French, German, Latin, or Greek	4	4
Mathematics I.	4	4
Science—Biology, Chemistry, Physics, or Surveying	4	4

This course will count as part of the student's Group Electives as detailed on p. 50.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For Group V., he should choose Biology.

For Group VI., he should choose Chemistry.

For Group VII., he should choose Physics.

For Group VIII., he should choose Mathematics or Surveying.

SOPHOMORE YEAR.

	First Term.	Second Term.
*History or Political Science	3	3
Foreign Language, continuing the language taken in the freshman year	4 or 3	4 or 3

Group Electives [See page 50] to make not less than fifteen and not more than seventeen hours weekly.

*This work may be postponed to the junior year in case it is necessary for the student to continue a subject begun in the freshman year.

JUNIOR YEAR.

	First Term.	Second Term.
Philosophy I., II.	3	3
Second Foreign Language	4 or 3	4 or 3

Group Electives and Free Electives to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis the first term and an oration or a thesis the second term. See page 91.

Group Electives and Free Electives chosen from the list on pages 93-95 to make a total for the course of not less than one hundred twenty term hours.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of Groups V., VI., VII., or VIII., in which his work is to be done.

The head of the department in which the major work is done becomes the student's adviser. See page 103.

Group V.

1. Biology ..... 20 hrs.
2. Chemistry ..... 14 hrs.
3. Physics ..... 8 hrs.

Group VI.

1. Chemistry ..... 20 hrs.
2. Biology or Physics ..... 14 hrs.
3. Biology or Mathematics or Physics ..... 8 hrs.

Group VII.

1. Physics ..... 20 hrs.
2. Chemistry ..... 14 hrs.
3. Mathematics ..... 8 hrs.

Group VIII.

1. Mathematics or Surveying ..... 20 hrs.
2. Physics or Mathematics ..... 14 hrs.
3. Biology or Chemistry ..... 8 hrs.

COURSE OF INSTRUCTION

BY DEPARTMENTS.

In this detailed description of the courses of instruction the number of "hours" refers to the number of hour recitations weekly. Each term is eighteen weeks in length.

All courses are offered yearly, except as especially noted.

Any elective course may be withdrawn if not chosen by at least four students.

Two hours of laboratory work are counted as equivalent to one recitation hour.

ASTRONOMY.

The courses in Astronomy aim to give the student a comprehensive view of the science and to acquaint him with the theories of the development of the solar system and the structure of the universe. In all courses the student is required to study the members of the solar system, star clusters, nebulae, and other celestial objects with the aid of the instruments in the Newton Observatory.

COURSE I.—General Astronomy. A study of the members of the solar system, the laws that govern their motions, and other phenomena. Also study of the stars and nebulae, with a discussion of the laws and theories of their relations. The important applications of astronomy to time determination, navigation, etc., find their places in this course. Finally the theories of cosmogony are outlined and the evidence that the heavenly bodies give in support of these theories is discussed. The student will be required to make systematic observations and to perform appropriate experiments in connection with the course. Open to students who have had a course in High

School Physics in addition to Mathematics I., or to those who have completed Physics I.

Throughout the year, three hours.

COURSE II.—Field Astronomy. Determination of time, latitude, and longitude, by the transit, sextant, and chronometer. Open to those who have completed Trigonometry and Astronomy I.

Second term, two hours.

COURSE III.—History of Astronomy. A course tracing the progress of the science from early times, including the work of the celebrated pioneers, down to the present day. Open to students who have completed Course I.

Given in 1915-16.

Second term, two hours.

COURSE IV.—Spherical and Practical Astronomy. For advanced students. The theory of observation and instruments. The theory and practice of determination of time, latitude, and longitude. Eclipses and occultations. Double star observations. Positions of planets and comets with the nine-inch equatorial. Open to students who have completed Mathematics II., Physics I., and Astronomy I., and may be begun either the first or second term.

Throughout the year, four hours.

BIOLOGY.

The courses in this department are designed to acquaint the student with the great world of life in its different forms, functions, and uses. Considerable attention is given to details in observation and to a comparative study of forms, thereby training the student to observe accurately and to think clearly and logically. The economic aspects of the subject are considered with the view of presenting some of the great problems in the applied biological sciences.

A Biological Club exists for advanced students in

which reviews of current biological literature or of research work of the student are presented.

COURSE I.—General Biology. This course aims to give the fundamentals of the science, considering life in its broadest aspects as illustrated in various types; the various laws governing form and function, and the general principles of organic evolution are considered. The first term is largely zoological in character, the second term botanical. The field work consists in the collection and identification of some group of animals or plants; in the laboratory a series of type forms is studied. Lectures and recitations two or three hours a week, laboratory and field work two and a half hours a week.

Throughout the year, four hours.

COURSE II.—Principles of Biology. A course which deals with evolution, natural selection, mutation, genetics, including Mendel's Law, inheritance of acquired characters and eugenics, and the physical basis of life and heredity as found in the cell, together with the general facts and theories of development. Lectures and assigned readings. Open to all college students above freshman rank.

Throughout the year, one hour.

COURSE III.—Advanced Botany. The external and internal morphology of a series of plants illustrating the various orders of the plant kingdom is studied. Special attention is given to the evolutionary side of the subject, and to the correlating of structure with function. Field work forms an important feature of the course. Lectures and recitations one hour a week, laboratory and field work four hours a week. Open to students who have completed Course I., or its equivalent.

Throughout the year, three hours.

COURSE IV.—Advanced Zoology. The external and internal morphology of a series of animals illustrating the various classes is studied. The first term is devoted to the invertebrates, the second term to the vertebrates, including the dissection of various forms; the work of the first term is extensive, that of the second term intensive and largely comparative. Lectures and recitations two hours a week, laboratory work four hours

a week. Open to students who have completed Course I., or its equivalent.

Throughout the year, four hours.

COURSE V.—Economic Botany. The aim of this course is to give the student a knowledge of the history, distribution, and uses of the various economic plants, such as those furnishing foods, fibers, drugs, timbers, flowers, etc., as well as those causing disease. Lectures and recitations two hours a week; field and laboratory work two hours a week. Open to students who have completed Course I., or its equivalent.

First term, three hours.

COURSE VI.—Economic Zoology. A general course corresponding to Course V, but dealing with economic animals, including the study of economic insects. Lectures and recitations two hours a week; field and laboratory work two hours a week. Open to students who have completed Course I., or its equivalent.

Second term, three hours.

COURSE VII.—Bacteriology. The aim of this course is to acquaint the student with the general distribution and physiology of these important organisms and to show their important connection with human welfare. The laboratory work is designed to give the student training in bacteriological technique by growing and studying the morphology and physiology of some specific type forms. Lectures and recitations one hour a week; laboratory work four hours a week. Open to students who have completed Course I.

Throughout the year, three hours.

COURSE VIII.—Plant Physiology. A course which deals with the plant in its relations to its environment, including soil, light, heat, etc.; plant diseases and plant breeding are also considered. The laboratory work is largely experimental. Lectures and recitations one hour a week; laboratory work four hours a week. Open to students who have completed Course I.

Second term, three hours.

COURSE IX.—Cytology and Histology. A course which treats of the structure of the cell and its various modifications into tissues; the laboratory work is designed to give the student training in technique and consists in the fixing, imbedding, sectioning, staining, and mounting of various tissues, mostly from animals. Lectures and recitations one hour a week; laboratory work six hours a week. Open to students who have completed Course I., and preferably Course IV.

First term, four hours.

COURSE X.—Vertebrate Embryology. This course includes the study of the development of the frog and the chick from the one-celled stage until fully formed. The study of the various stages and the preparation of slides constitute the laboratory work. Lectures and recitations one hour a week; laboratory work six hours a week. Open to students who have completed Course IX.

Second term, four hours.

COURSE XI.—Biological Problems. This course is designed for advanced students who are desirous of pursuing some definite line of biological work not included in the above courses. Open to students only by permission of the head of the department.

Hours to be arranged.

CHEMISTRY.

The courses offered by this department are intended to have both a cultural and a technical value. The work has been organized as the result of an endeavor to acquaint the student with the general and special principles of the work, to familiarize the worker with accurate methods of experimentation, to develop the ability to observe critically and accurately, and make correct inferences, and finally, to provide suitable preliminary training for independent research work.

COURSE I.—General Inorganic Chemistry. This course concerns itself with the fundamental principles on which the

science is based. The non-metals, metalloids and metals, together with their more important compounds, are studied. Energy as a factor in chemical reactions receives special attention, as also do the elementary principles of chemical dynamics and statics. Stress is laid upon certain processes and various materials in their application to the commercial arts. Each student has a desk in the laboratory at which the required experiments are performed. More elaborate experiments to illustrate lectures are performed by the instructor. Text-books: Lee's Text-Book of Experimental Chemistry and Mellor's Modern Inorganic Chemistry. Lectures and recitations two or three hours a week. Laboratory work two to four hours a week.

Throughout the year, four hours.

COURSE II.—Analytical Chemistry.—Qualitative Analysis. —Bases and Acids. The student is required to work through a system of preliminary analytical reactions. The more intimate knowledge of the elements and their compounds thus gained enables the student to verify the methods of grouping and separating the elements. At stated intervals, lectures and recitations will be devoted to discussions of all reactions. The modern theories of "solution," "precipitation," "chemical equilibrium," etc., receive much attention. Students are required at the conclusion of the work to analyze a given number of unknown substances without reference to the manual. This course includes a brief course in Spectrum Analysis. Laboratory and lectures six hours a week throughout the year. Open to those who have completed Course I., or its equivalent.

Throughout the year, three hours.

COURSE III.—Analytical Chemistry.—Quantitative Analysis. The aim of this course is to provide a thorough knowledge of the principles of gravimetric and volumetric analysis as applied to the separation and determination of the common bases and acids found in salts, minerals, ores, etc. It is of special value as a training in the more refined methods of manipulation. Each student is required to calibrate a set of weights and all volumetric apparatus. The ability to make a quantitative analysis of an unknown substance is the final requirement.

Electro-Chemical Analysis.—A brief course in electrolytic methods of analysis is included in this course .

Laboratory work, eight hours per week. All laboratory work is supplemented by lectures. Open to those who have completed Course II., or its equivalent.

Throughout the year, four hours.

COURSE IV.—Gas Analysis. This course is offered because of the analyst's frequent need of this kind of training. It deals with the density of gases, with the various methods of determining the composition and calorific value of various gases, and with many modern practical applications of gasometric apparatus. Lectures and laboratory work four hours a week.

Throughout the year, two hours.

COURSE V.—Organic Chemistry. The work of this course begins with an historical sketch of the development of organic chemistry, and a consideration of such topics as the nature of carbon, homology, isomerism, stero-isomerism, types of formulae, nomenclature, and classification of organic compounds. The compounds of the aliphatic and aromatic series are then studied in detail. These compounds and processes which are of technical or theoretical importance receive special attention. This course is recommended to those students who contemplate the study of medicine or other phases of chemico-biological work, or chemical engineering. Course VI. should be taken in conjunction with this course. Open to students who have completed Course II.

Throughout the year, three hours.

COURSE VI.—Organic Preparations, Reactions, and Analysis. This is a laboratory course involving methods for the preparation and purification, and the analysis of a number of typical organic compounds. The physical and reaction properties, and relationships of these compounds are then studied in detail. In the prosecution of this work the student becomes familiar with the apparatus and operations involved in the work of practical organic chemistry, such as crystallization, determination of melting and boiling points, fractional distillation, steam distillation, extraction, drying, determinations of

molecular weights; and with the general methods of preparation, such as etherifications, oxidation and reduction, saponification, nitration, sulphonation, diazotization, etc. The work in organic analysis includes in addition to the usual qualitative tests, quantitative determinations of carbon, hydrogen, nitrogen, and halogens. Laboratory work, six hours per week. Open to those who have completed or are taking Course V.

Throughout the year, three hours.

COURSE VII.—Sanitary Analysis and Bacteriological Chemistry. The purpose of this course is to familiarize the student with the standard methods of making physical, chemical, and bacteriological examinations of air, water, milk, sewage, etc. Although attention will be given to the study of the growth and development of bacteria, and the methods of cultivating and recognizing them, stress will be placed upon the chemical changes effected by these organisms. This course is recommended to those who contemplate pursuing sanitary work. Opportunity is provided for practical as well as research work along this line. For example, blood, wine, and sputum are studied, with a view to emphasizing their diagnostic value; methods for testing efficiency of disinfectants are considered; etc.

Throughout the year, three hours.

COURSE VIII.—Advanced Analytical Chemistry. Technical Analysis. This course offers opportunity for advanced students to study methods of analysis along special lines. It is designed to familiarize the individual with many of the analytical methods in use in commercial laboratories. Three lines of work are open to the student: (a) **Metallurgical Analysis,** which includes the analysis of those substances which are inorganic in their nature, such as iron and steel, alloys, silicates and suphides, ores, cements, coke, and coal. (b) **Food Analysis,** which includes the analysis of those substances essentially organic in nature, as foods, and the detection of adulterants. (c) **Agricultural Chemistry,** which includes analysis of soils, fertilizers, dairy products, etc.

Special courses in **Biological Chemistry** and **Toxicological**

Analysis are offered to students preparing for the profession of chemistry or the study of medicine.

Hours elective.

COURSE IX.—Physical Chemistry. This course aims to give the student a general knowledge of the principles of the subject by means of lectures, reading, and laboratory work. This latter work will include the determination of "the heat of neutralization," "heat of solution," "speed of reaction," solubilities, molecular weights, conductivities, refractive indices, and an experimental study of various other physical and chemical constants. Six hours per week.

Throughout the year, three hours.

COURSE X.—History and Development of Chemical Theory. This course endeavors to trace the development of chemistry from its earliest origins to the present time, by a study of the lives and influence of the men who have contributed to this phase of science. Lectures, collateral readings, and preparation of theses. Open to students who have completed Course I.

Throughout the year, two hours.

COURSE XI.—Industrial Chemistry. The work of this course has been outlined to meet the wants of those students who are particularly interested in the application of chemical processes to the commercial arts.

Throughout the year, three hours.

ECONOMICS.

This department is open to those who have completed one year in History or Political Science.

Particular attention is given to the study of the development of economic life and institutions, American conditions being specifically analyzed. Students are made familiar with the accepted principles of the science and are given a practical acquaintance with the complex modern economic organization. Encouragement is also offered to individual research, leading to

possible future specialization. Lectures, papers, and comparative examination of various authorities constitute the method of instruction.

COURSE I.—Principles of Economics. Introducing a survey of industrial history, production and distribution, compassing the accepted elements of the science. The text used is Seager's Economics, and required readings are assigned in the leading modern authorities.

First term, three hours.

COURSE II.—Applied Economics. This is a continuation of Course I. and is a detailed examination of the economic principles applied in trusts, labor, tariff, taxation, finance, and social conditions of today. Lectures, conferences, papers, and individual investigations are the methods of instruction.

Second term, three hours.

COURSE III.—Money and Banking. A survey of financial history and thought through modern times in various nations, with an intensive study of the theories, practice and legislation of the United States. Scott's Money and Banking is the outline text of the course.

First term, two hours.

COURSE IV.—Economic Theories. History of the development of economic thought, including a study of the leading principles of the science as propounded in Adam Smith, Ricardo, Mill, Senior, Menger, Wieser, Böhm-Bawerk, Walker, and Clark. The seminar method is used. Open to a limited number of those who have completed Courses I. and II.

Second term, two hours.

EDUCATION.

Through the generosity of Mr. Truman D. Collins, provision has been made for the endowment of a Chair of Philosophy and Education. The funds are not immediately available, but arrangements have been made whereby a sufficient amount of work will be offered in

Education to satisfy the requirements of the new educational code of Pennsylvania.

ENGLISH BIBLE.

The work in this department is intended to open to the student the rich stores of literature contained in the Bible; to familiarize him with the history of the Hebrew people, their civilization, and their influence on the world; and to lead to the critical study of the spirit and form of Hebrew literature as it is shown in the English version. The English Bible is studied as a great monument of our literature and as the source of our knowledge of one of the great civilizations of the world. The courses do not touch questions of doctrine or belief.

COURSE I.—A General Introduction to the English Bible. A brief sketch of the history of the Hebrew and Greek Bibles is offered and the evolution of the English Bible traced in detail and illustrated by rare original copies of the early translations. The course includes the history of the Hebrew people as told by their own chroniclers. A general survey of the different types of literature to be found in the Old and New Testaments will be given, especial attention being directed to the picturesque biography and to the historical crises which vitally affected the development of the nation. In connection with this the geography of the Holy Land and the chronology of the historic and prophetic eras will be studied. The student will be constantly reminded of the influence of Bible thought and phrase upon modern literature. Moulton's Modern Reader's Bible will be used as text-book, but much of this course will be given in lectures which each student is required to keep in carefully written note-books which at intervals will be examined by the instructor in English.

Throughout the year, one hour.

COURSE II.—New Testament History and Literature. Stress is here laid on the importance of understanding the political

and religious background of the life and thought embodied in the New Testament. To this end the Maccabean and Roman periods of Jewish history are carefully studied. The new light thrown upon the "Land and the Book" from recent explorations will be examined, and the social and industrial condition of the world in the times of Jesus and St. Paul noted. The relation of the Christian religion to the Old Testament religion and to the Greek and Persian mysteries will be traced. The Gospels and the Acts will be studied both from the historical and literary standpoints and the development of church life and thought will be carefully examined. The Epistolary and Apocalyptic literature will be studied in the order of its development and with constant reference to the new discoveries of contemporaneous documents. Open to those who have taken Course I.

Given in 1915-16. *Throughout the year, two hours.*

COURSE III.—Old Testament History and Literature. The method here pursued is similar to that in the preceding course. The history of Palestine from the earliest times down to 165 B. C. is studied in connection with the life and development of the Hebrew people. The international connections with Egypt, Phœnica, Syria, Assyria, and Babylon are briefly traced and the political, social, and religious influence noted. The marked eras of the nation's growth are sharply defined from the Conquest to the Exile and the later origin of Judaism explained. The Old Testament literature is taken up in the order of its historic development and its relation to the life, thought, and external history of the Israelites is brought out. The principles governing the proper interpretation of all Oriental writings are defined and applied to the early Bible narratives. The relations of the Bible to science are here examined. The literature of the Old Testament, taken up chronologically, is compared with contemporaneous writings. The latest results of Archæology are made available. Particular attention is given to the origin, growth, and character of the legal and wisdom literature and to the theology of the Prophets. A few of the greatest masterpieces, such as Job, Ecclesiastes, etc., are studied in detail.

Given in 1916-17. *Throughout the year, three hours.*

ENGLISH LANGUAGE AND LITERATURE.

The aim of this department is to fit the student to use the English language as an instrument for the easy, idiomatic, and energetic expression of his thought; to train him, both by theory and by practice, for natural and effective public address; to acquaint him with the essential facts in the development of the English language and literature, and with the great authors who have created that literature; and to render him sensitive to the literary and aesthetic values of life. Rigorous and painstaking habits of scholarship are constantly inculcated; but the student is never allowed to forget that literature is vital—that it draws its subject-matter and its inspiration from life and in turn transmutes the crude and imperfect forms of life into beauty and character.

COURSE I.—Lectures on the Elements of Rhetoric; Compositions; and Selected Readings in English Literature. This course aims to acquaint the student with the principles and the practice of the art of rhetoric, and to stimulate in him a desire for good literature. It is believed that successful instruction in rhetoric depends more upon example and practice than upon precept. With this in mind, examples of the best literature are kept constantly before the student. He is encouraged to write freely upon subjects that are familiar to him, and that spring naturally from the interests and the activities of his daily life. The instructors correct each paper in detail, and make appointments with each student for private consultation or for practice work in small groups. The instruction is made extremely flexible, and freshness and variety of method are constantly sought.

Throughout the year, three hours.

COURSE II.—Introduction to English Literature. 1. An outline history of the development of English literature. 2. Collateral reading. 3. The study and interpretation in class

of Shakspere's Macbeth, Milton's Minor Poems, and Selections from Pope.

Elective for all students who have completed Course I., and required of all who desire to do advanced work in English.

Throughout the year, two hours.

COURSE III.—English Poetry from 1789 to 1832. Copious readings from the poetry of Burns, Wordsworth, Scott, Byron, Shelley, and Keats. The constant aim is to arouse in the mind of the student an intelligent enthusiasm for the great poetry of the period; and, while holding him to accurate and diligent scholarship, to show him how life and literature interpenetrate.

Elective for all students who have completed Course II.

Throughout the year, three hours.

Given in 1915-16.

COURSE IV.—The Victorian Period of English Literature. Landor, Carlyle, Tennyson, Arnold, Ruskin, and Browning. Conducted in the same manner as is Course III., with which it alternates.

Elective to all students who have completed Course II.

Throughout the year, three hours.

Given in 1916-17.

COURSE V.—American Literature. Outlines of its development. Lectures upon representative authors. The critical study and interpretation of masterpieces. Appreciations and essays by members of the class.

Elective for all students who have completed Course III. or Course IV., and to a limited number who have completed Course II.

First term, two hours.

Given in 1916-17.

COURSE VI.—Elements of Literary Criticism. Winchester's Principles of Literary Criticism. A systematic inquiry into the essential elements of literature, and a detailed consideration of the various forms of literature. A considerable amount of illustrative reading is expected, and the student is required

to test two or three classic productions by a practical application of the principles of criticism.

Elective under the same conditions as Course V.

Second term, two hours.

Given in 1916-17.

COURSE VII.—Shakspere. Analytic and interpretative studies of five plays of Shakspere: As You Like It, Othello, King Lear, Antony and Cleopatra, The Tempest. A careful reading of Dowden's Shakspere Primer is required in connection with this course.

Elective under the same conditions as Course V.

First term, two hours.

Given in 1915-16.

COURSE VIII.—Prose Fiction. Bliss Perry's A Study of Prose Fiction. Studies in the structure and the significance of the novel, the romance, and the short story. Illustrative readings and carefully prepared papers.

Elective under the same conditions as Course V., except that the class must be kept within small limits, and that advanced students who have shown special talent as writers will be given preference.

Second term, two hours.

Given in 1915-16.

COURSE IX.—Anglo-Saxon. Bright's Anglo-Saxon Reader, with appropriate readings in reference books on the English language. The course aims not only to give a reading knowledge of Anglo-Saxon, but also to show the development of Anglo-Saxon into Modern English. Students intending to teach English are especially advised to enter this course.

Elective for all students who have completed Course II.

First term, three hours.

COURSE X.—Chaucer. This course considers the literary aspects of Chaucer's poetry. The life of the poet and the historical and the literary background of the period are

studied. Many of the Canterbury Tales are read, and as much more of Chaucer's other poetry is included as time allows.

Elective for all students who have completed Course II.

Second term, three hours.

Given in 1915-16.

COURSE XI.—Old and Middle English Poetry, not including Chaucer. The course will include such Old English poetry as Beowulf, The Wanderer, The Seafarer, and The Battle of Brunanburh; and typical Middle English histories, legends, romances, tales, and lyrics. No special training in Anglo-Saxon or Middle English necessary.

Elective for all students who have completed Course II.

Second term, three hours.

Given in 1916-17.

FRENCH LANGUAGE AND LITERATURE.

It is the aim of the courses in this subject to give to the student: (1) an accurate knowledge of the language of the present time both as written and spoken; (2) an appreciation of the more important masterpieces of the literature proportionate to the knowledge of the language; and (3) a knowledge of the historical development of the literature.

The work as above outlined is carried on by means of recitations, the writing of prose and essays, the hearing of lectures in French, and by collateral readings. Much stress is laid from the beginning upon the ability of the student to express himself directly in the language. With this end in view the work of the class room is conducted in French, and phonetic methods are employed in order to give accuracy of pronunciation.

COURSE I.—Elementary French. Fraser and Squair's Gram-

mar is used as a reference book. Oral and written exercises. Dictation. Reading of easy prose.

Throughout the year, four hours.

COURSE II.—Intermediate French. Reading of such authors as George Sand, Mérimée, Daudet, Augier, Dumas, etc. Memorizing of selected poems. In this course brief outlines of the history of literature are also given with collateral readings from celebrated authors.

Throughout the year, four hours.

COURSE III.—French Literature in the Seventeenth Century. A study of the drama and of the miscellaneous literature of the period. Corneille, Racine, Molière, La Fontaine, La Bruyère, Pascal, Bossuet, Fenelon, Mme. de Sévigné, Mme. de La Fayette.

Throughout the year, three hours.

Given in 1915-16.

COURSE IV.—French Literature in the Eighteenth Century. This course will treat of the time and influence of Voltaire, Montesquieu, Rousseau, the Encyclopedists, Beaumarchais, Lesage, Marivaux, André Chénier.

Throughout the year, three hours.

Given in 1916-17.

COURSE V.—French Literature in the Nineteenth Century. A study of the principal authors of this period. Chateaubriand, Lamartine, Victor Hugo, Alfred de Vigny, Alfred de Musset, Théophile Gautier, Leconte de Lisle, Sainte-Beuve, Balzac, with a brief survey of contemporary writers.

Throughout the year, three hours.

Given in 1916-17.

COURSE VI.—French Literature before the Seventeenth Century. A study of the history of old French literature, which will include reading of extracts from the Chanson de Roland, etc. The writers of the latter part of this period will also be studied.

Throughout the year, three hours.

Given in 1915-16.

COURSE VII.—French Prose Composition.

Throughout the year, one hour.

GEOLOGY.

The courses in Geology are eminently general culture courses, explaining as they do many common phenomena and leading the student to take a greater interest in natural objects. The class work is supplemented by practical work in the field, museum, and laboratory.

COURSE I.—Physiography of the Land and Elementary Meteorology. Laboratory work in the study of common minerals, rocks, and topographic and weather maps will be supplemented by several excursions. Recitations three hours a week and laboratory or field work, two hours.

Second term, four hours.

COURSE II.—General Geology. This course is planned to give a comprehensive view of the elements of geology, and it includes physiographic, structural, dynamic, historical, and economic geology. The historical part deals largely with North America. The economic part treats of coal, oil, gas, building stones, clay, cements, abrasives, underground waters, precious stones, and the ores of iron, copper, lead, zinc, gold, and silver. In the laboratory a study is made of the common rock-forming and important ore-forming minerals, the classification and identification of rocks, topographic and geologic maps and folios, and fossils typical of the various geologic periods. Recitations, three hours a week; laboratory or field work, two hours a week.

Open to those who have had a year in chemistry.

Throughout the year, four hours.

COURSE III.—Mineralogy. Crystallography, blowpipe analysis, and determinative mineralogy. A minor part of the work in the laboratory deals with crystal forms and crystal models, and a major part with the study of about one hundred

and fifty minerals by means of the blowpipe and by simple chemical and easily applied physical tests.

Open to those who have had a year in chemistry. Recitation, one hour a week; laboratory work, four hours a week.

First term, three hours.

GERMAN LANGUAGE AND LITERATURE.

The methods employed in the first two years of this study are intended to establish a broad and thorough foundation for an appreciative study of German literature in the advanced courses. Accuracy and intelligent pronunciation is insisted upon; and the principles of phonetics are represented in simple form and are put to practical use in the reading exercises in the class room. In prose composition more attention is given to reproductive exercises and theme-writing than to translations. The oral use of the German language in the class room will be constantly increased until the recitations are conducted entirely in German.

A German Conversation Club, in which a special opportunity for linguistic practice is afforded, has been founded among the students of the College. Membership is open to those who have taken Course II. or its equivalent.

COURSE I.—Elementary German. Walter & Krause's Beginning German. Such reading as the following: Storm's Immensee, Baumbach's Im Zwielicht, Heyse's L'Arrabbiata, Goebel's Hermann der Cherusker, Wildenbruch's Neid, Schiller's Wilhelm Tell. Oral exercises based on the Gouin Series and oral and written reproduction of portions of the text read. The aim of this course is to enable the student to read and understand accurately German prose of ordinary difficulty and to acquire some proficiency in writing and speaking German.

This course represents from five to six terms of ordinary

high school work, but may not be taken to remove language requirements for admission to college.

Throughout the year, four hours.

COURSE II.—Intermediate German. Reading of modern prose, modern comedy, and classical drama. One hour a week throughout the year will be devoted to prose composition, reproduction of texts in German, and short themes in German.

Open to all students who have credit for Course I., or who present two years of German for admission to college.

Throughout the year, four hours.

COURSE III.—Introduction to Eighteenth Century Classics. Lessing, Goethe, and Schiller. Two dramas of each are read in the order named and at least one work of each is critically analyzed. Monthly themes in German and a semestral essay in English. Collateral reading: Robertson's History of German Literature,—chapters on the above poets. Alternates with Course IV.

Throughout the year, three hours.

Given in 1916-17.

COURSE IV.—German Novel and Short Story. Rapid reading of one or more works of H. von Kleist, Eichendorf, Hauff, Hoffman, Stifter, Ludwig, Freytag, C. F. Meyer, Keller, Storm, Heyse, Fontane, Wildenbruch, Sudermann, and Rosseger. A part of this reading is done outside the class and is made part of written themes in German. Collateral reading: Robertson's History of German Literature, chapters on the authors read in class. Alternates with Course III.

Throughout the year, three hours.

Given in 1915-16.

COURSE V.—German Conversation and Composition. The aim of this course is to train the student in colloquial German in speech and writing. Selections from modern authors are read to the class and reproduced from memory, and themes are written weekly on assigned subjects. The conversation is based on Kron's Daily Life and Vos' Materials for German Conversation. Given in conjunction with Course III. This course,

conducted in German, is especially intended for those who look forward to the teaching of German.

Throughout the year, one hour.

COURSE VI.—Goethe's Life and Work. First Term. Reading of works illustrating different periods of Goethe's literary development, such as Götz von Berlichingen, Egmont, Torquato Tasso, and selections from Dichtung and Wahrheit. Collateral reading from Bielschowsky's Goethe.

Second Term. Goethe's Faust. Interpretation of the drama and discussion of its philosophic and ethical ideas.

In this course a considerable amount of collateral reading will be required. Alternates with Course VII.

Throughout the year, two hours.

Given in 1916-17.

COURSE VII.—Nineteenth Century Drama. Kleist, Grillparzer, Hebbel, Ludwig, Gutzkow, Wagner, Hauptmann, Sudermann. Rapid reading of representative play of each. Short themes in German on the reading matter. Collateral reading: Robertson's History of German Literature; chapters on the authors read in class. Alternates with Course VI.

Throughout the year, two hours.

Given in 1915-16.

COURSE VIII.—German Literature. A systematic study of German literature from the earliest times, with special emphasis on the Classic Periods of the Twelfth and Eighteenth Centuries. Lectures in German, reports, and readings. Collateral reading: Thomas' Anthology of German Literature, Wenckebach's Meisterwerke des Mittelalters, Woerner's Niebelungenlied, Schiller's Braut von Messina and Don Carlos, and Goethe's Faust. Alternates with Courses IX. and X.

Throughout the year, two hours.

Given in 1915-16.

COURSE IX.—History of the German Language and Advanced Prose Composition. A general survey of the historical development of the German language, with discussions of such linguistic problems as bear relation to current usage. Text-book: Behagel's Die Deutsche Sprache. Recitations and

lectures. This course is especially intended for those preparing to teach German.

First term, two hours.

Given in 1916-17.

COURSE X.—Middle High German. Study of the dialect in its relation to modern High German, and readings from Hartmann von Aue's Der arme Heinrich, Das Niebelungenlied, and Walter von der Vogelweide's lyrics.

Second term, two hours.

Given in 1916-17.

COURSE XI.—Scientific German. This course has been specially arranged for the student of science who is interested mainly in a reading knowledge of German. Open to students who have completed Course II.

Throughout the year, three hours.

GREEK LANGUAGE AND LITERATURE.

The aim of the department is to lead the students to the acquisition of a living knowledge of the Greek language as an introduction to a practical acquaintance with Greek life and thought. It is believed that by careful and accurate work in the first years of the language the student can gain such knowledge as will enable him to read widely and independently. The courses laid down are such as are thought to be best adapted to that end. The work is varied, and an attempt is made to give a view of all departments of the literature. The department possesses a growing collection of casts of antique sculpture, painted vases and other antiquities, about a thousand photographs, and several hundred lantern slides.

Students entering college without Greek are given opportunity to prepare to enter Greek I. with a minimum loss of time.

GREEK A.—Elementary Greek. This is a course intended to prepare students to enter Greek I., after a year of careful work. The first term is devoted to some such book as Benner and Smyth's First Greek Book, the second term to selections from Xenophon and other Attic authors. Students of some maturity and reasonably well grounded in Latin will be prepared in one year to do the work in Greek I. with profit.

Only in exceptional cases will this course, without further work in the subject, be counted for a degree.

Throughout the year, five hours.

COURSE I.—Homer, The Iliad or the Odyssey. Detailed study of two or three books and rapid reading of as much more as the time allows. This rapid reading of the Homeric poems as literature is made the basis of the study of early Greek life and civilization.

Greek Composition.—Passages from classic authors are carefully read in class. A weekly exercise in composition is based on the Greek text read. The aim is to develop a vocabulary and an accurate knowledge of Greek syntax. Impromptu writing of Greek is emphasized.

Throughout the year, four hours.

COURSE II.—Lysias. Selected Orations. A detailed study is made of the history of Athens in the age of Pericles and of the Peloponnesian War as an introduction to this part of the work.

Plato.—The Apology and Crito and selections from the Phaedo. Outline of history of Greek philosophy.

This course is made the basis of the study of historical Greek life and civilization.

Throughout the year, three hours.

COURSE III. A.—Greek Drama. Detailed study of two plays and rapid reading of several others. Usually the following will be read: Aeschylus' Agamemmon, Sophocles' Oedipus Tyrannus, Euripides' Iphigeneia in Tauris, and Aristophanes' The Frogs. Individual investigation of special topics. The course is made not only a study of the origin and development of the Greek Drama, but also a study in literary evolution.

Throughout the year, three hours.

COURSE III. B.—Greek Oratory. Andocides, Isocrates, Demosthenes. The history and politics and the public and private antiquities of the times. Lectures and assigned readings.

Throughout the year, three hours.

One of these courses is given each year. Open to all who have completed Course II.

COURSE IV. A.—Classical Archaeology. Egyptian, Babylonian, and Assyrian Art. Mycenaean Civilization. Greek Vase Painting. Greek Architecture.

Throughout the year, two hours.

Given in 1916-17.

COURSE IV. B.—Classical Archaeology. Greek Sculpture.

Throughout the year, two hours.

Given in 1915-16.

Courses IV. A. and IV. B. are given in alternate years. The instruction is mainly by lectures, but text-books are used and a large amount of collateral reading is required. The courses are open to those who have completed Course I., and under some limitation may be elected by students having no knowledge of Greek.

COURSE V.—Greek Testament. A minute and critical study of a portion of the New Testament to insure a familiar and accurate knowledge of vocabulary, syntax, and idioms, followed by more rapid reading to develop ease and rapidity in grasping the thought of the original. The purpose of the course is to lay the foundation for exegetical work. Open to all who have completed Course II.

Throughout the year, two hours.

Given in 1916-17.

COURSE VI.—Greek Literature. A careful survey of the field from Homer to the Roman period. One hour a week is devoted to lectures and text-book work, one hour is given to critical readings in English translations, and two hours to readings in Greek. Open to all who have completed Course II.

Throughout the year, four hours.

COURSE VII.—Greek Literature in English. The course consists of the lectures, text-book work, and English readings of Course VI. It may be elected by students having no knowledge of Greek.

This course is required of all students electing Greek as their major subject.

Throughout the year, two hours.

HEBREW.

COURSE I.—Davidson's Hebrew Grammar, completed. Twelve or more chapters in Genesis read.

Throughout the year, four hours.

This course is given in alternate years if called for.

HISTORY.

The aim of the department is to give that knowledge of the facts and philosophy of history which belongs to a liberal education. The subjects in periods and countries are planned also to train for university work or to equip for preparation to enter law or journalism. The evolution of European civilization from its sources and the growth and influence of Anglo-Saxon institutions are the general theme of the work. History is presented as a real educative process. The department has the appropriate library authorities for the several courses, and source materials are freely used. Abstracts, maps, essays, and outlines are required in the class room. The method of instruction is a combination of lectures and text-book. Course I. is required for admission to the succeeding courses.

COURSE I.—European History. The period covered extends from the Teutonic migration to the French Revolution. The first term is given to mediaeval institutions and the transition

to modern Europe. Thatcher and Schwill is the text for class guidance, with Robinson's European Readings and assignments in standard authorities. The second term is occupied with the growth of nationalities and the religions and political struggles for balance of power. The Oxford series of Periods of History are the texts. One hour of lecture each week, with two hours of quiz and reports.

Throughout the year, three hours.

COURSE II.—The Renaissance and the Reformation. The first term is devoted mainly to the Renaissance in Italy and subordinately in England. The political, intellectual, literary, and aesthetic phases of the movement are studied. Burckhardt and Symonds are the authorities used, with Einstein for the English Renaissance. The second term is occupied with the Reformation from Wycliffe to the Peace of Westphalia. The texts are Hausser and Fisher.

This course alternates with Course III.

Throughout the year, three hours.

Given in 1915-16.

COURSE III.—French Revolution and Nineteenth Century. A lecture course with reference study in several authorities. The first term examines the causes and the progress of the Revolution and concludes with the Napoleonic Era. The second term covers Europe after the Congress of Vienna, tracing the formation of the German and Italian unity and the continental triumph of liberalism. Hazen's Europe is used as an outline of the work.

Given in 1916-17.

Throughout the year, three hours.

COURSE IV.—History of England. The work extends from the Teutonic origins to the Nineteenth Century. Lectures, collateral readings, and text-books. Gardiner's Student's History and Green's Short History of the English People furnish the outline; and references are required in the constitutional histories of Stubbs, Maitland, and Taswell-Langmead and in the works of Froude, Gardiner, and Lecky. This course alternates with Course V.

Throughout the year, two hours.

Given in 1916-17.

COURSE V.—The Political and Constitutional History of the United States, from 1781 to 1877. The sources are extensively used as found in the government publications, the writings and addresses of statesmen, and the contemporary interpretation of national affairs. Lectures, and reports by students on assigned readings in Schouler, Henry Adams, McMaster, Gordy, Rhodes and the American Nation Series. Monographs required of the class each term.

Throughout the year, two hours.

Given in 1915-16.

ITALIAN LANGUAGE AND LITERATURE.

COURSE I.—Elementary Italian. Italian Grammar, Grandgent. Oral and written exercises. Dictation. Texts such as De Amicis, Cuore; Goldoni Il vero Amico; Manzoni, I Promessi Sposi.

Throughout the year, three hours.

Given in 1915-16.

COURSE II.—Literature in the Thirteenth and Fourteenth Centuries. Dante, La Divina Commedia; Petrarca, Rime Scelte, etc.

Throughout the year, two hours.

Given in 1916-17.

LATIN LANGUAGE AND LITERATURE.

The courses in the Latin department are intended to direct the student to a systematic study of the language and its development, to acquaint him through a varied reading of the best authors with the leading features of the literature, and to make him familiar with the main facts of Roman history, life, and civilization. Technical grammar and composition are studied only in so far as they contribute to the comprehension of the language. The department is well equipped with books, maps, and fac-similies of inscrip-

tions and has a good collection of photographs, lantern slides, and antiquities for illustrative purposes.

The instruction is given by means of recitations, supplemented by lectures and, in the advanced courses, by individual work.

COURSE I.—Erasmus, selected Colloquia.

Cicero, De Senectute or De Amicitia.

Livy, Books XXI.-XXII., or selections from Books I.-XXV.

Weekly exercises in Prose Composition.

This course includes a detailed review of Latin case structure and syntax, and a specific effort is made to teach right habits of reading and translation.

Throughout the year, four hours.

COURSE II.—Horace, selected Odes and Satires.

The more common metrical structures are studied so that the Latin can be read with ease. Especial attention is directed to Horace's life and philosophy and to as much of the history and customs of the period as sheds light on the subject matter.

Readings from Latin Verse of all periods. History of Latin Literature.

Throughout the year, three hours.

COURSE III. A.—Roman History. A brief introductory course of lectures on the history of Rome from the beginning to the Civil War period. Extensive readings in English, covering the same period. The Civil War and the Early Empire will be studied more intensively in connection with readings in Latin from Cicero's Letters and Tacitus' Annals. Reports and assigned readings in Mommsen, Heitland, Ferrero, Merivale, and the standard biographies.

Throughout the year, three hours.

B.—Martial, selected Epigrams.

Quintilian, Institutions X. Lectures and discussions on Roman literary forms.

Throughout the year, three hours.

One of these courses alternates with Course IV. Open to all who have completed Course II.

Given in 1915-16.

COURSE IV.—Roman Private Life. Lectures and reports on Roman private life with readings mainly from the Letters of Pliny.

This course alternates with Course III. Open to all who have completed Course II.

Throughout the year, two hours.

Given in 1916-17.

COURSE V.—Roman Topography. Lectures and reports on topography, architecture, monuments, and history of Rome.

May be elected without previous preparation in Latin.

Throughout the year, two hours.

Given in 1915-16.

COURSE VI.—Advanced Latin Composition. Practice in writing prose, with careful study of syntax and idiom. Individual work designed primarily for those who look forward to teaching or to graduate work. One hour class work and one private conference weekly.

Throughout the year, two hours.

Given in 1916-17.

NOTE.—For students entering college without complete preparation in Latin, instruction will be provided in such secondary Latin as may be required to satisfy entrance conditions.

MATHEMATICS.

The elementary courses in mathematics are: college algebra, plane and spherical trigonometry, analytic geometry including conic sections, and differential and integral calculus. These courses may be taken in the freshman and sophomore years. They mark the minimum attainments that a teacher of mathematics in a high school or an academy should possess.

COURSE I.—Algebra. This is a continuation of the algebra required for entrance. Much attention is given to graphical representation of linear and quadratic equations, and the following topics are considered: mathematical induction and the binomial theorem for positive integral exponents, logarithms, undetermined coefficients, permutations and combinations, the theory of equations and an elementary treatment of determinants.

Trigonometry. The elements of trigonometry on the plane and on the sphere.

Throughout the year, four hours.

COURSE I. C.—Solid Geometry.

First term, three hours.

COURSE II.—Analytic Geometry and Calculus. An elementary treatment of the fundamentals of analytic geometry, of two and three dimensions, designed to equip the student for work in calculus. This course includes a complete elementary course in differential and integral calculus; and while it satisfies the requirements in mathematics for B. S. students, it will be adapted to those who are fitting themselves to teach mathematics in secondary schools.

Throughout the year, four hours.

COURSE III.—Advanced Calculus. This course is a continuation of Course II. It should be taken by those who intend to pursue advanced work or are looking forward to work in applied mathematics.

First term, three hours.

COURSE IV.—Differential Equations. An elementary treatment of differential equations, with applications to physics and mechanics. This course is necessary to a well-rounded course in mathematics.

Second term, three hours.

COURSE V.—Projective Geometry. Lectures, supplemented by reading. Reference books: Reye, Geometrie der Lage; Scott, Modern Geometry; Cremona, Projective Geometry.

Higher Plane Curves. The general properties of curves, the resolution of singularities, and forms of curves of the third and fourth orders.

Throughout the year, three hours.

Given in 1915-16.

COURSE VI.—Functions of a Complex Variable. A general introduction to the theory of functions of a complex variable, following the methods of Weierstrass and Riemann.

Throughout the year, two hours.

Given in 1916-17.

PHILOSOPHY.

The aim of this department is to acquaint the student with the chief philosophic theories of the past and present, to cultivate in him the habit of critical and independent thought, and set forth a consistent and satisfactory method of dealing with the fundamental problems of speculation.

COURSE I.—Psychology. A general introduction to the subject. A text-book is used, which is supplemented by informal lectures, assigned readings, and papers on special topics.

First term, three hours.

COURSE II.—Ethics. A brief survey of the history of ethical thought is followed by an examination of the chief ethical systems of modern times, with a view to arriving at the really valid principles which underlie human conduct. These principles are then applied to the various institutions and natural relations of human life. A text-book is used, supplemented by informal lectures. Open to those who have taken Course I.

Second term, three hours.

COURSE III.—Logic. This course aims to give the student a thorough knowledge of the fundamental laws and forms of thought. The principles governing immediate and mediate reasoning will be explained and the leading types of deduction and induction will be studied. A text-book will be used, sup-

plemented by lectures, and the student will be drilled in the different figures of the syllogism and in the detection of fallacies. Practical exercises will constitute a large part of the work demanded.

First term, three hours.

COURSE IV.—Metaphysics. This applies the conclusions reached in the preceding course to the questions relating to reality. Our chief metaphysical ideas are examined and an attempt is made to fix their meaning. These results are then applied to the construction of a consistent and valid theory of the nature of the material world and of the human soul. Open to all who have taken Courses I. and III.

Second term, three hours.

COURSE V.—History of Philosophy. A study of the chief philosophers and philosophic systems of ancient and modern times. A text-book will be used. Open to all who are taking or have taken Course I.

First term, two hours.

Given in 1916-17.

COURSE VI.—Theism. The true basis of knowledge is inquired into, the traditional arguments for the existence of God are critically examined, and the attempt is made to show that the theistic conception of the world is a necessary postulate of reason and of human life as a whole. Open to all who have taken Courses I. and V.

Second term, two hours.

Given in 1916-17.

COURSE VII.—Philosophy of Religion. This will be chiefly a lecture and reference course in which much reading and independent work will be expected on the part of the student. It will be introduced by a discussion of the religious data of thought and knowledge, the relation between metaphysics and theology, the true nature of religion and the trustworthiness of the religious consciousness. It will embrace the comparative study of the various nature, culture, and prophetic religions, thus critically studying religion in its historic phe-

nomena. It will include a consideration of the absolute religion.

Open to those who have taken Courses I., and II., or III.

Second term, three hours.

Given in 1915-16.

PHYSICS.

The aim of the instruction in this department is to give the student a thorough knowledge of the principles and laws that govern physical phenomena, and to acquaint him with the actual operations of these principles and laws. The work is presented to the student by lectures, with experimental demonstrations, combined with recitations, and the solution of problems. In the practical work, the student performs in the laboratory those experiments that will give him a practical knowledge of the principles and laws of physics.

The first courses are elementary and intended primarily for general culture. The remaining courses are designed for those more especially interested in science, those who expect to teach the subject, or those who are planning to pursue engineering.

COURSE I.—College Physics. Mechanics, Sound, Heat, Light, Magnetism, and Electricity. A general course in which the laws and phenomena of physics are carefully developed and illustrated. Lectures, experimental demonstrations, and recitations three hours a week. Laboratory work two hours a week.

Throughout the year, four hours.

COURSE II.—A Problem Course to supplement Course I. Open only to students who are pursuing Course I.

Throughout the year, one hour.

COURSE III.—Elementary Analytic Mechanics, Statics, Kinematics, and Kinetics. Special attention is given to the applica-

tion of mechanics to engineering problems. Open to those who have completed Mathematics II. and Physics I.

Throughout the year, two hours.

COURSE IV.—Physical Measurements. A lecture and laboratory course involving the adjustment and use of instruments of precision. The significance and accuracy of results, together with the sources of errors and means of their elimination are carefully discussed. Open to students who have completed Course I.

Throughout the year, three hours.

COURSE V.—General Physics. A course in theoretical physics dealing principally with mechanics, heat, the properties of vapors and gases, the theory of solutions, the kinetic theory of gases, thermo-dynamics, magnetism and electricity. Lectures, experimental demonstrations and recitations, two hours a week. Laboratory work four hours a week. Open to students who have completed Course I. and Mathematics II.

Throughout the year, four hours.

COURSE VI.—History of Physics. Open as a Free Elective to students who have completed Course I.

Throughout the year, two hours.

OTHER COURSES. For students desiring to specialize in physics, courses dealing with any of the subjects treated under this department will be given as the work is demanded.

POLITICAL SCIENCE.

The sequence of courses in this field is planned so that emphasis is laid upon the functions of national, state, and local governments in the United States, with the two-fold purpose of preparing men and women for the duties of citizenship, and of familiarizing students with a concrete example of government as a foundation for the more advanced theoretical work in the nature and functions of the state in general. Three

courses are devoted to government and modern political problems, while the fourth is devoted to political philosophy.

COURSE I.—American Government. This course is divided between a study of the structure and functions of our national and state governments. Throughout the course present-day political problems of national and local interest will be made the subject of discussion in class. Beard's American Government and Politics and Bryce's American Commonwealth furnish an outline of the work.

First term, three hours.

COURSE II.—Municipal Government. This course includes an outline of the growth of American municipalities and a study of the organs and functional mechanism of modern cities in the United States and European countries. Emphasis is laid upon the newer tendencies in the progress of municipal government. Munro's The Government of American Cities and The Government of European Cities furnish a basis for the work.

Second term, three hours.

COURSE III.—Comparative Government. A study is made of the constitutional structure and organization of the more important governments of Europe. The object is to enable the student to compare these governments with each other and with our own. The course is open only to those who have completed Political Science I. and II. and History I. Ogg's The Governments of Europe is the text.

First term, two hours.

COURSE IV.—Principles of Political Science. This course comprehends a study of the origin, nature, and functions of the state and a critical examination of ancient, medieval, and modern political theories. The requirements for admission into this course are the same as for Course III.

Second term, two hours.

PUBLIC SPEAKING.

The courses in public speaking are designed to train the student in the composition and the delivery

of the various forms of public address. So far as possible, the work is adjusted to the particular needs of the individual student.

COURSE I.—Written analysis and interpretation of extracts from great orations. Extemporaneous speaking. This course aims to develop directness, earnestness, and dignity in public address. During the first term a careful study is made of the psychological principles which govern effective speaking. Sample speeches are studied and assigned passages are delivered by each student. During the second term the same work is continued but more extemporaneous work is required.

Elective for all who are taking or have completed English I.

Throughout the year, one hour.

COURSE II.—Argumentation and Debate. First Term. In this term the emphasis is laid upon theory. The principles of analysis, the rules of evidence, the elements of logic, and the kinds of fallacies are discussed. There is also brief-drawing leading up to written and oral debate. Second Term. The theory of the subject is concluded; the emphasis, however, is laid upon practice.

Elective for all who have completed Course I.

Throughout the year, one hour.

COURSE III.—The Oration. First Term. An examination of the principles of the oration as presented in some such book as Shurter's The Rhetoric of Oratory. Each member of the class is required to present a paper giving the results of a study of some great English or American orator. Second Term. A number of selected orations will be tested in the light of the principles studied during the first term. Collateral readings. The writing of an original oration.

Elective for all who have completed Course I.

Throughout the year, one hour.

COURSE IV.—Practical platform work in the delivery of the colloquial, elevated, and impassioned styles of oratory. Lectures on the philosophy of expression with accompanying studies to be worked out by the pupil in platform presentation.

A systematic study of voice culture is begun in this course. The "Natural Tone Drill" is the system used. A study of the principles underlying gesture work is also required.

Elective for all who have completed Course I.

First term, two hours.

COURSE V.—The study of voice culture is continued in this course in a more advanced and technical way. Dramatic readings from Shakspere and interpretative studies of the masterpieces of literature will be given each student. Some extemporaneous platform work will also be required.

Elective for all who have completed Course IV.

Second term, two hours.

SPECIAL WORK for the individual pupil will be given in private lessons. A fee of ten dollars for each term hour will be charged.

SPANISH LANGUAGE AND LITERATURE.

COURSE I.—Elementary Spanish. Olmsted and Gordon's Spanish Grammar. Reading of such easy Spanish as Alarcon, El Capitán Veneno; Galdós, Dona Perfecta.

Throughout the year, three hours.

Given in 1916-17.

COURSE II.—A study of modern Spanish novels and dramas.

Throughout the year, two hours.

Given in 1915-16.

SURVEYING AND GRAPHICS.

The courses in surveying and graphics are based largely on the needs of the surveyor and draughtsman. The work is scientific and yet thoroughly practical in its scope and methods. While these courses are provided for students taking Group VIII., they are open as electives to all students.

COURSE I.—Descriptive Geometry. The problems are those relating to the point, line, and plane, the representation of sur-

faces, their intersection and development. This course includes instruction in the use and care of instruments, sketching, and isometric and cabinet projections.

Throughout the year, three hours.

COURSE II.—Plane Surveying. This course consists in a series of lectures, supplemented by exercises in the field. The student is taught the use of the chain, tape, compass, transit and level. The work in the drawing room consists in the computations incident to the work of the surveyor and in plotting from notes taken in the field.

First term, three hours.

COURSE III.—Railway Surveying. This course consists of a study of railway curves and earthworks. The field work includes a reconnaissance, the preliminary and location surveys, and the necessary computations and maps.

Second term, three hours.

COURSE IV.—Mechanical Drawing. This course includes plotting, tracing, the making of blue prints, detail and dimension drawing from sketches, models, and from other drawings with a different scale.

Throughout the year, three hours.

COURSE V.—Applied Mechanics. This course includes a study of the strength and elasticity of beams and columns, with the application of mechanics to structural design.

Throughout the year, three hours.

PHYSICAL TRAINING.

For Young Men.—The object of this department is to give the student growth and increase of strength; to promote health and symmetrical development. These objects are accomplished by regular class exercises in the gymnasium during the fall and winter, on the field in the spring, and by periods of optional work after class hours. Physical measurements and strength tests of all students are taken upon entrance

and at the close of the college course and also at such other times as seem necessary. These form the basis of comparison of the students' conditions and needs, and determine the character and amount of exercise necessary to overcome marked deficiencies, irregular development, or such deformities as are amenable to physical exercise.

Students will receive personal advice with reference to habits of life, exercise, study, and recreation, as well as suggestions pertaining to personal hygiene.

Regular exercise, consisting of Swedish work, military gymnastics, Indian club, wand, and dumb-bell drills, principles of heavy gymnastics, is required of the men of the sophomore and freshman classes, three hours a week, from the midddle of October to the middle of May. Elective work is offered the junior and senior classes.

For Young Women.—The aim of the work is to acquire a symmetrical development of the body as a basis for health and grace. The training is based on Delsarte Philosophy of Expression, and the Swedish and German systems of free movements and light gymnastics. All young women are required to take the prescribed work unless excused on recommendation of the instructor.

The general work includes Indian club and dumb-bell exercises, flexing exercises to overcome stiffness, exercises to develop control of the muscles, and all devices in training that secure freedom of bodily action.

The Gymnasium for Women is equipped with the

most modern apparatus. In addition to the regular class exercises opportunity is offered to do individual work under the direction of the instructor. In the basement of Hulings Hall there is a bowling alley for the exclusive use of young women.

REQUIRED WORK.

For graduation in any Group, all work specified as required must be completed, and additional subjects selected from the general list of electives sufficient to make a total of not less than one hundred twenty term hours. "Term hour" signifies one hour recitation weekly for one term of eighteen weeks. The prescribed work in physical training must also be completed. In the senior year a thesis and an oration are required. But in the Groups leading to the B. S. degree two theses or a thesis and an oration may be presented.

Sixteen recitations weekly is the regular number, but the Registrar may assign seventeen. No student may take more than seventeen or less than twelve hours' work without the approval of the Registration Committee. In no case will additional hours be allowed except on the basis of previous high grade work.

LIST OF ELECTIVES.

The following list of elective studies includes all subjects that are elective in any of the Groups. Some of the subjects are required in one or more of the Groups, but are elective in others. The list is open to all students under the conditions named below.

1. The student must be fully prepared for the work.

2. He must avoid all conflicts in hours.

3. So far as possible all required work below his rank and Group Electives must be completed before advanced electives are chosen. This rule may be waived in cases where it is necessary in order that the student may be ready for a particular line of work in the latter part of his course.

4. A study once elected must be pursued to the end of the year or to the completion of the subject. No credit for graduation will be given for partial courses unless by arrangement made with the instructor and the Registrar before the study is begun.

5. The student's choice of elective work must exhibit a definite and coherent plan.

6. The faculty reserves the right to disapprove choice of electives.

The Arabic numerals refer to the number of hour recitations weekly; the Roman numerals refer to the detailed description of the course of instruction found on pages 51 to 88.

	First Term.	Second Term.
Astronomy I.	3	3
Astronomy II.	..	2
Astronomy III.	..	2

	First Term.	Second Term.
Astronomy IV.	4	4
Biology I.	4	4
Biology II.	1	1
Biology III.	3	3
Biology IV.	4	4
Biology V.	3	..
Biology VI.	..	3
Biology VII.	3	3
Biology VIII.	..	3
Biology IX.	4	..
Biology X.	..	4
Biology XI.	2	2
Chemistry I.	4	4
Chemistry II.	3	3
Chemistry III.	4	4
Chemistry IV.	2	2
Chemistry V.	3	3
Chemistry VI.	3	3
Chemistry VII.	3	3
Chemistry VIII.	4	4
Chemistry IX.	3	3
Chemistry X.	2	2
Chemistry XI.	3	3
Economics I., II.	3	3
Economics III., IV.	2	2
English II.	2	2
English III.	3	3
English IV.	3	3
English V., VI.	2	2
English VII., VIII.	2	2
English IX., X.	3	3
English XI.	..	3
English Bible II.	2	2
English Bible III.	3	3
French I.	4	4
French II.	4	4
French III.	3	3
French IV.	3	3
French V.	3	3

	First Term.	Second Term.
French VI.	3	3
French VII.	1	1
Geology I.	..	4
Geology II.	4	4
Geology III.	3	..
German I.	4	4
German II.	4	4
German III.	3	3
German IV.	3	3
German V.	1	1
German VI.	2	2
German VII.	2	2
German VIII.	2	2
German IX., X.	2	2
German XI.	3	3
Greek I.	4	4
Greek II.	3	3
Greek III.	3	3
Greek IV.	2	2
Greek V.	2	2
Greek VI.	4	4
Greek VII.	2	2
Hebrew	4	4
History I.	3	3
History II.	3	3
History III.	3	3
History IV.	2	2
History V.	2	2
Italian I.	3	3
Italian II.	2	2
Latin I.	4	4
Latin II.	3	3
Latin III.	3	3
Latin IV.	2	2
Latin V.	2	2
Latin VI.	2	2
Mathematics I.	4	4
Mathematics II.	4	4
Mathematics III.	3	..

	First Term.	Second Term.
Mathematics IV.	..	3
Mathematics V.	3	3
Mathematics VI.	2	2
Philosophy I., II.	3	3
Philosophy III., IV.	3	3
Philosophy V., VI.	2	2
Philosophy VII.	..	3
Physics I.	4	4
Physics II.	1	1
Physics III.	2	2
Physics IV.	3	3
Physics V.	4	4
Physics VI.	2	2
Political Science I., II.	3	3
Political Science III., IV.	2	2
Public Speaking I.	1	1
Public Speaking II.	1	1
Public Speaking III.	1	1
Public Speaking IV., V.	2	2
Spanish I.	3	3
Spanish II.	2	2
Surveying and Graphics I.	3	3
Surveying and Graphics II., III.	3	3
Surveying and Graphics IV.	3	3
Surveying and Graphics V.	3	3

GENERAL INFORMATION.

COLLEGE FEES.

All students pay a fee of $100 a year, one-half payable at the opening of each term. This includes incidental, library, and gymnasium fees.

In the laboratories the following fees are charged each term:

Astronomy I., II.	$ 2.00
Astronomy IV.	7.50
Biology I.	2.00
Biology III. and IV.	4.00
Biology V. and VI.	3.00
Biology VII.	7.50
Biology VIII., IX. and X.	5.00
Chemistry I.	4.00
Chemistry II., III., VI., VII., VIII.	7.50
Chemistry IV., IX.	5.00
Geology I., II.	2.00
Geology III.	6.00
Physics I.	3.00
Physics IV., V.	5.00
Surveying I.	2.00
Surveying II.	3.00
Surveying III.	3.00
Surveying IV.	3.00
Surveying V.	3.00

In addition, breakage of material is charged at actual cost.

All college fees are due on the day of registration.

No student is admitted to class until all fees are paid or satisfactorily arranged for.

LIVING EXPENSES FOR YOUNG MEN.

The young men of the College board in Cochran Hall, in fraternity chapter houses, or in private families. The cost of board in Cochran Hall is $110.00 a year. The cost in chapter houses and private families is, as a rule, ten to twenty-five per cent. more. One half the room rent in Cochran Hall is due and payable at the opening of the first term and one half at the opening of the second term. A deposit fee of ten dollars is required when the room is reserved. This fee will be deducted from the second half year's payment. The rate for rooms varies from forty to sixty dollars a year for each student. All rooms except those occupied by seniors are to be surrendered not later than noon on Monday of Commencement Week. The amount for board in Cochran Hall is due as follows: $30.00 at the opening of the year; $30.00 on the second Monday in November; $30.00 at the opening of the second term; $20.00 on the third Monday in April. If the student has a room-mate, the necessary expenses for a year will fall within the following estimates:

	Low.	Liberal.
Term fee	$100.00	$100.00
Room rent, fuel, light	30.00	50.00
Table board	110.00	125.00
Books	10.00	20.00
Total	$250.00	$295.00

To be added to these figures are the laboratory fees, if the student pursues studies in which such charges are made. The cost of books will vary greatly from term to term, but a fair average will fall within the limits given.

Expenses other than those enumerated depend largely upon the student's tastes and habits, and the College does not undertake to estimate them. For the items mentioned the figures given are exact. Few students will have occasion for spending more than $300 a year. This, of course, does not include traveling expenses, clothing, or luxuries. An economical student can live on $250 a year; indeed not a few students spend less than this and yet live comfortably.

A circular detailing the expense of living in Cochran Hall will be sent on request.

YOUNG WOMEN.

Allegheny College is a co-educational institution. It endeavors to give young women the highest educational advantages open to young men. Instruction is given in the same subjects and by the same professors; and young women have access to all departments of the College, and are eligible to all honors. For students desiring to combine music with college work, opportunity for excellent instruction is afforded in the Pennsylvania College of Music.

Hulings Hall. Young women not living at home or with relatives are required to live in Hulings Hall. The constant aim is to furnish here an ideal college home for young women, where they shall be surrounded with influences which promote true and cultured womanhood. The Hall is under the charge of the Dean of Women, whose influence, with that of her competent assistants, is constantly felt in the social, moral, and religious development of the young women under her care.

For the proper maintenance of the Hall as a college home for young women certain specific rules are essential, but it is the policy of the College to make only such regulations as will best protect the interests of those who reside there.

The rules governing the conduct of the young women of Hulings Hall were carefully drawn up by the Administration of the College and the Dean of Women, and by action of the Faculty entrusted to the Student Government Association of the Hall, who assume the responsibility for the observance of all rules and regulations in spirit and in letter. Thus under the guidance of the Dean of Women and the Executive Board of the Association, the young women of the Hall are given individual and community responsibility for their conduct in college life. A copy of the regulations for the government of the Hall will be sent on request.

The residents of the dormitory maintain in the building the services of a resident trained nurse. This valuable addition to the Hall life has been justified by the better conditions for health and comfort afforded the young women. For this purpose an assessment of a five dollar house fee is made payable at the beginning of the year.

The rooms are furnished with single beds, mattresses, pillows, chairs, and tables. Each resident supplies the following articles: Sheets, pillow-cases, bed covering, towels, and napkins.

The rates by the year, including board, room, heat and light, are $200.00 for each student. The rooms are all double, so that two students occupy each room. In case a student desires to room alone, there is an ad-

ditional charge of $50.00. Bills are payable in four installments as follows: $60.00 the opening of the year, $50.00 the second Monday in November, $50.00 the opening of the second term, and $40.00 the third Monday in April. A deposit fee of $10.00 is required when a room is reserved. This fee is credited on the last payment of the year.

AID TO STUDENTS.

Self-Help.—Young men help themselves in several ways. A considerable number of the present students are earning their expenses in whole or in part. Some are employed in light work connected with the College or the boarding clubs. Some find in town opportunities for work of various kinds. A few are serving churches in the neighborhood of Meadville. It is the policy of the College to help students that help themselves.

The Lindley Endowment.—By the will of the late Miss Lucy Lindley, of Meadville, the College received the sum of ten thousand dollars, the interest of which is used to assist students dependent upon their own efforts to obtain an education. Application for aid from this fund should be made to the President. It should be remembered, however, that only a limited number of students can be aided in this way.

The Ballantyne Scholarship Fund.—In 1904 Mrs. Hettie F. Ballantyne, of Pittsburgh, gave to the College thirty thousand dollars in memory of her husband, James Alexander Ballantyne; the fund is to be known as the James Alexander Ballantyne Scholarship Fund. The income is used to pay the college term fees, and in

cases of need, certain other expenses, of the sons and daughters of ministers of the Pittsburgh Conference, and of young men from the territory of that conference who are studying for the ministry. This fund is administered by the officers of the College Faculty on recommendation of a committee of the Pittsburgh Conference.

The George W. Wright Scholarship Fund.—This is a gift of $1,000 from the Honorable George W. Wright of Mercer, Pa., a former student of Allegheny College. The proceeds of this fund is to constitute a scholarship to be awarded each year on the nomination of Mr. Wright's representative.

High School Scholarships.—The Board of Trustees has established forty prize scholarships of fifty dollars each, to be awarded each year to honor students in forty of the best high schools in the patronizing territory of the college. In case the graduating class numbers ten or less, the scholarship must go to the one having maintained the highest scholastic rank during his high school course. If the class numbers more than ten, and less than twenty-five, it may go to the first or second in rank, and if there are over twenty-five in the class the scholarship may go to any one of the highest three. The amount of the scholarship is to be applied on the fees of the freshman year.

Educational Society Loans.—Students who are members of the Methodist Church, showing promise of usefulness in any form of Christian activity, may secure loans from the Educational Society. These loans are without interest and need not be paid in full until five years after graduation. These loans are offered not only to candidates for the ministry, but

also to all needy and worthy students who show promise of useful service in lines of Christian activity and are endorsed by the home Quarterly Conference. The loans are made by the Society on the recommendation of the Faculty.

No aid from the above mentioned funds, or from any other source, is given to students who use tobacco.

A student having received aid from any of the College funds will be given a letter of dismissal to enter another college only after all such aid shall have been returned.

RELIGIOUS CULTURE.

The College was founded by Christian men for the promotion of Christian culture. It believes that education should always include, as its highest aim, the development of Christian character. It seeks to make the moral and religious life of the college community such that the student will be under as helpful influences as he would be in his own Christian home.

Chapel services are held each morning and all students are required to be present. Regular attendance on Sunday mornings at some church, selected by the student, or his parents, is also advised. Prayer meetings are held Wednesday evening of each week. The results are manifest in the quickening and strengthening of many in the religious life.

The Young Men's Christian Association and the Young Women's Christian Association are active and efficient organizations. Bible study classes and a mission study class are largely attended.

The religious influence of the College is not in any sense sectarian, but Christian. On the rolls this year are representatives from fourteen Christian denominations.

THE ADVISER SYSTEM.

Each student on entering chooses some member of the faculty, who serves throughout the freshman year as a special counsellor on all matters in which the student finds the need of frank and friendly advice. The relation between adviser and student is intended to be perfectly fraternal, without restraint on either side. At the beginning of the sophomore year the professor under whom the student does his major work becomes his adviser for the remainder of his course.

HONOR SYSTEM.

All college examinations and quizzes are conducted under an honor system, by which the presence of instructors in the room is dispensed with, and the student is placed on his honor. The following signed declaration is required to make the examination valid: **"I hereby declare on my honor that I have neither given nor received aid in this examination."**

All cases of suspected fraud are dealt with by the Student-Honor Committee, who are authorized to decide on the question of guilt and to recommend to the Faculty the penalty of dismissal from College in the case of a Senior, Junior, or Sophomore, and, in the case of a second offense, a Freshman.

CLUBS.

The Classical Club, composed of the instructors in the classical departments and about twenty-five ad-

vanced students, meets for the review of new books and current literature, and for the reading and free discussion of papers submitted by members on lines of classical investigation.

The Quill Club represents the journalistic and literary interests of the College. Its aim is to encourage press correspondents, to co-operate intelligently with the editors of the college publications, and to foster original and creative literary effort. It meets monthly. The membership is limited to thirty.

The German Club is an organization for students under the leadership of the professor of German that meets fortnightly for the purpose of arousing and sustaining interest in the German language as a vehicle of oral expression and of studying German life, institutions, and politics. Membership is open to all students who have had one or more years of regular class-room work in German.

The Philo-Franklin Forum is a society organized on the plan of a national deliberative body. At its weekly meetings various public and college problems are discussed, and parliamentary drill is afforded. Its membership consists of students who are especially interested in debate, under the guidance of representatives of the departments of English and Public Speaking.

Le Petit Salon meets fortnightly for the purpose of French conversation and study of French art, literature, etc.. Its alternate sessions are in conjunction with the Meadville branch of the Alliance Francaise, an international organization. The membership is limited to thirty and includes the instructors and advanced students in French.

The Modern Problems Club, under the head of the History Department, meets monthly for the discussion of current, social, economic and political problems. This club, which is a branch of the Intercollegiate Civic League, is limited to juniors and seniors.

The Tingley Biological Club, composed of instructors and advanced students in the Biology Department, meets fortnightly for the presentation and discussion of papers by the various members; each member presents two papers a year dealing with some phases of biological research.

PRIZES.

Three prizes are open to competition by students of the college classes.

The Wakefield Oration Prize.—Mr. James A. Wakefield, of Pittsburgh, furnishes a prize of fifty dollars in the name of his grandfather, the Rev. Samuel Wakefield, D.D., awarded in February of each year, to the young man delivering the best oration. The winner of this prize represents the College in the Intercollegiate Civic Oratorical League Contest held in May.

The Philo-Franklin Oration Prize.—The old Philo-Franklin Literary Society has provided a permanent endowment fund of six hundred dollars for prizes in oratory. The income will provide a first and a second prize. The contest is open only to members of the Philo-Franklin Forum.

Heckel Prizes in Science.—Two prizes, a first prize of thirty-five dollars and a second prize of fifteen dollars, are given each year by Dr. Edward B. Heckel,

of Pittsburgh. These prizes are awarded for the best two theses written by graduate or undergraduate students upon scientific subjects. The theses are presented on the first day of May and the prizes awarded the following Commencement Day.

ATHLETICS.

Outdoor exercise and athletic sports under the direction of competent supervisors are fostered as helpful in complete physical training, but are made consistently secondary to scholastic work. No student may take part in athletic events without the consent of the physical director after a physical examination. The athletic interests of the College are in the hands of the Athletic Association, to which all members of the College are eligible, and the business is managed and all funds administered by an Athletic Advisory Board, composed of four members of the faculty and five students. By an arrangement voluntarily entered into by the students, all young men pay $5.00 and all young women $3.00 for the support of athletics. For this they receive season tickets to all games. All details of athletic contests must receive the sanction of the Athletic Board, and every precaution is taken to insure clean athletics. Players must be *bona fide* students taking not less than twelve hours work, must have been registered at the opening of the year in which they compete, may not have more than one condition in any preceding work or be delinquent in the current term's work, and may not receive remuneration, directly or indirectly, for their services. The College is a member of the National Collegiate Athletic Association and conforms to the minimum

eligibility requirements of that organization. Competent coaches are provided.

DEGREES.

The degree of Bachelor of Arts in Classical Languages is conferred upon those who complete in a satisfactory manner Group I. and II. The degree of Bachelor of Arts in Modern Languages is conferred upon those who complete in a satisfactory manner Group III. or IV. The degree of Bachelor of Science is conferred upon those who complete in a satisfactory manner Group V., VI., VII., or VIII.

Bachelors of Arts of this College, or of another of equal rank, may pursue, in residence, work in not more than two distinct lines of study; and on the completion of a full year's work, including a satisfactory thesis, receive the degree of Master of Arts.

The Degree of Master of Science is conferred on Bachelors of Science who have completed the work of Groups V., VI., VII., or VIII., on the same conditions as the degree of Master of Arts is conferred upon Bachelors of Arts.

Every person receiving a degree from the College pays a diploma fee of five dollars.

REGISTER OF STUDENTS.

GRADUATE STUDENT.

Fegely, Walter Hanchett ..... North Girard
B. S., Allegheny College, 1914—Chemistry and French.

Seniors.

Abrams, Dorothea Blanche .....Jamestown, N. Y.
Allmendinger, Raymond Burgett .....Russell
Allshouse, Charles Vance ..... Creighton
Alssid, Lazare ..... Marseilles, France
Arnold, Floyd Elmer .....Athens
Askey, Edith F. .....Oil City
Askey, Harrison L. ..... Bellingham, Wash.
Baker, Cecil Boyer .....Espyville
Baker, Charles Frank ..... Meadville
Barkley, Mary Josephine .....Braceville, O.
Barnes, Faye Elizabeth ..... Toledo, O.
Bassett, Harriette Burritt .....Bridgeport, Conn.
Boyd, Howard .....Meadville
Bright, John .....New Castle
Brockway, Clair Frederic ..... South New Lyme, O.
Brooks, Frank Gary .....Rochester
Brooks, Harold King ..... Mill Run
Brownell, Howard Fred .....Smethport
Chapin, Alice Elizabeth .....Meadville
Chapin, Viva Waive .....Union City
Dashiell, Dorothy .....Washington, D. C.
Davenport, Irene Bessie .....Meadville
Dotterrer, Melvin Allen .....Kellettville
Downing, Robert Harold .....Meadville
Duffy, Hazel Marie .....Corry
Dunbar, Donald George .....Meadville
Dunbar, Douglas Mansor .....Meadville
Dunlap, Charles Walter .....Pittsburgh
Ebaugh, Esta Bernice .....Bellevue

Ellis, Janet Adelia ..... Meadville
Fahr, Herman Henry ..... Meadville
Flick, Charles Willis .....Tionesta
Fowler, Katharine Roe .....Meadville
Fox, Ralph .....Kingsville, O.
Gealy, Ethel May .....Oil City
Gilbert, Carl A. ..... Scottdale
Gilbert, Earl Brooks .....Sottdale
Gillespie, Mae .....Meadville
Godsave, William Albert .....Meadville
Gornall, Oliver .....Saegertown
Gould, Louise .....West Springfield
Graham, Orson James .....Oil City
Grant, Harry Vane .....Meadville
Hartman, Hartley John Henry .....Pittsburgh
Heath, Clyde Hartson ..... Corry
Howell, Marie Julia .....Buffalo, N. Y.
Hutchinson, Joe Berklett .....Parkersburg, W. Va.
Jacobs, Homer R. .....Emlenton
Johnston, Linda Beatrice .....Meadville
Jones, Maree Elizabeth .....Madison, O.
Kemp, Alexander Hershman .....Ingram
Koehler, Robert Phillip .....Reynoldsville
Lane, James Garfield ..... Meadville
Lavely, Ruth Elizabeth .....Meadville
Leiphart, George Barden .....Springboro
Lewis, Iva Belle ..... West Elizabeth
Limber, Alfred Edward .....Meadville
Lippitt, Margaret Lucile .....Meadville
Long, Wendell Partridge .....Naples, N. Y.
McCoy, Arley Von .....Corinth, W. Va.
McCoy, Cecil Glen .....Corinth, W. Va.
McKay, Eleanor .....Meadville
McKinley, David .....Meadville
McKinney, Arlene .....Coatesville
McKinney, Velma Frances .....Coatesville
McLean, Margaret .....Meadville
McMahon, Agnes Margaret .....Erie
MacConnell, Charles Marshall .....Franklin
Mellon, Melvin Guy .....Conneaut Lake

Metcalf, Malcolm McNaughton .....Jamestown, N. Y.
Miller, Carl Cummings .....Mt. Pleasant
Miller, Clarence Arthur ..... Meadville
Mook, Harold Floyd .....Saegertown
Mulfinger, Carl Leonard .....Meadville
Mullian, Beatrice Maree .....Westford
Nebinger, Ruth Grove .....Homestead
Nelson, Lillian .....McKeesport
Norris, S. Evelyn .....Meadville
Palmer, Malcolm Rice .....Meadville
Pappenhagen, Louis .....Meadville
Platt, Rose Alta .....Oil City
Quinn, Hannah Marie .....McKeesport
Ramirez, Pedro Ortiz .....Manuabo, Porto Rico
Reichel, Frank H. .....Saegertown
Reis, Lillian Morton .....Cochranton
Reynolds, Caryl Moore .....Pittsburgh
Ricker, George Albert .....Meadville
Robinson, Edward A. .....Sharpsburg
Robinson, Jeanette Goldstrohm .....Boston
Shaner, George A. .....Butler
Simpson, Margaret Mae .....New Brighton
Singley, Helen Josephine .....Meadville
Smith, Theodore Fell .....Greenville
Smock, Jessie Bernice .....Meadville
Sutton, Edith Mildred .....Butler
Swartley, Annette .....Meadville
Swift, Carrie Ladds .....Franklin
Taylor, Harrie Smith .....Cambridge Springs
Townsend, Stewart Strickler .....Perryopolis
Wasson, Harry Christopher .....Meadville
Webster, Rex Duane .....Avonia
Wiley, Sarah Virginia .....Seattle, Wash.
Wing, Helen Kissick .....New Castle

Seniors, 103.

Juniors.

Adams, Helen Rose ..... Meadville
Aey, Charles Arthur ..... New Castle
Allgood, Ruth Louise ..... New Castle
Amon, Fred Hughes ..... Greenville
Angove, Dortha R. ..... Oil City
Armstrong William Jefferson, Jr. ..... Kane
Bail, Homer Milton ..... Conneautville
Bash, Lawson Greene ..... Waynesburg
Beatty, Vina Marguerite ..... Oil City
Bell, Samuel, Jr. ..... West Middlesex
Best, Josephine Elizabeth ..... Meadville
Bitler, Tillie Ella ..... Meadville
Blasdell, Robert Allen ..... Dayton, N. Y.
Brownell, William Arthur ..... Smethport
Burns, Jesse Erwin ..... North Washington
Campbell, Ginevra Isabel ..... Kittanning
Campman, Seeley Franklin ..... West Middlesex
Carroll, Catherine ..... Meadville
Carroll, Mary Carrier ..... Brookville
Cole, Helen ..... Meadville
Cox, Raymond Andrew ..... Kane
Curry, Albert Gore ..... Wilkinsburg
Depp, Walter Mark ..... Punxsutawney
Dickey, Frank Rumsey ..... Hartstown
Downing, Florence ..... Meadville
Drake, Homer Emmet ..... Ashtabula, O.
Dundon, Lewis J. ..... Edinboro
Ellis, William Andrew ..... Meadville
Foster, Lois Clara ..... Oakmont
Gaskill, Hazel Mary ..... Meadville
Gates, Helen Haldena ..... Oil City
Gealy, Fred D. ..... Oil City
Hall, Edith ..... Meadville
Harper, Daphne ..... Meadville
Harper, Harold Vernon ..... Butler
Hasek, Helen Georgia ..... Franklin
Hawkey, Alice Lucille ..... Tidioute
Hill, William Adam ..... Ernst
Hoffman, Ray Earl ..... Phalanx, O.

Hudson, Ethel Gertrude ..... Greensburg
Johnson, Curtis Corydon ..... Meadville
Kelley, Martha M. ..... Butler
Kendall, Ralph Newton ..... Conneautville
Kightlinger, Emma Florence ..... Meadville
Kleckner, Ethel Lillian ..... Cambridge Springs
Klinginsmith, John Glenn ..... Conneaut Lake
Kramer, Norbert Clair ..... Meadville
Leaf, Edwin Barnhardt ..... Irwin
Ling, Ernest ..... Meadville
Lydell, Lulu Mae ..... Falconer, N. Y.
McKay, Leo ..... Sharon
McLean, Bailey Cortney ..... Meadville
Mackenzie, Helen Pithie ..... Oil City
Mellon, David Roy ..... Conneaut Lake
Miller, Marion Ruth ..... Erie
Munhall, Albert Francis ..... Meadville
Nash, Clarence Almerion ..... Chautauqua, N. Y.
Nelson, Benn Elwin ..... New Castle
Phillips, Norman E. ..... Sheffield
Pierson, Harry H ..... Meadville
Rankin, Harry Paul ..... Franklin
Reed, Earle Lyons ..... Butler
Reis, Wilbur Whippo ..... Cochranton
Rhoades, Robert L. ..... Mt. Pleasant
Rial, Leona Catherine ..... Ruffsdale
Ritchie, LaMarr ..... Indiana
Roach, Ethel Stover ..... Pittsford, N. Y.
Roberts, Georgia Pauline ..... Albion
Roberts, Nellie Genevieve ..... Meadville
Ross, Hazel Alma ..... Oakmont
Ross, Margaret ..... Chautauqua, N. Y.
Sanner, Fred Henderson ..... Wilkinsburg
Scott, Walter Leland ..... Kane
Sheets, Sankey L. ..... Greensburg
Smith, Margaret Elizabeth ..... Meadville
Stebbins, Dorothy Merle ..... Silver Creek, N. Y.
Stevenson, Charles Howard ..... Coraopolis
Strong, Anna ..... South Fork
Taylor, Blanche ..... Meadville

Tear, John W. ..... Painesville, O.
Thoburn, Bernice ..... Meadville
Waring, Emma Goodwill ..... Mansfield, O.
Whipple, Charlotte ..... Oil City
White, Edith Mary ..... Meadville
Wolf, Charles R. ..... Connellsville
Wolf, Paul Burton ..... Connellsville

Juniors, 87.

Sophomores.

Acker, Lewis Franklin, Jr. ..... Meadville
Askey, Edwin Vincent ..... Bellingham, Wash.
Bacon, Frank Haskell ..... Meadville
Baird, Olga Gwendolyn ..... Meadville
Baker, Edison Howard ..... Greenville
Barnhart, Arthur David ..... Scottdale
Barns, Robert Howard ..... Albion
Bourquin, Josephine ..... Conneaut, O.
Bowers, George Franklin ..... Big Run
Boyd, Nelson Henry ..... Sharon
Brooke, Grace Loar ..... Uniontown
Brooke, Julia ..... Uniontown
Brookmire, Neil Ivan ..... Findley's Lake, N. Y.
Campbell, Charlotta Marie ..... Meadville
Carew, Mary Katherine ..... Franklin
Carr, Georgia Edna ..... Bemus Point, N. Y.
Catherman, Raymond Fowler ..... Meadville
Chase, Elizabeth ..... Greenville
Clendenien, Miller Bartley ..... Tarentum
Clendenin, Mary Adelaide ..... Meadville
Clough, Veleda Louise ..... Corry
Craig, George Smith ..... Mercer
Curtis, Chalmer Clinton ..... Emlenton
Davison, Helen Miles ..... Oil City
DeLand, Ruth Elizabeth ..... Sheridan, N. Y.
Dewey, Ralph Smith ..... Ripley, N. Y.
Diefenderfer, Vivien Catherine ..... Conneaut, O.
Doane, Foster Baird ..... Butler
Drake, Lowell Claudius ..... Ashtabula, O.
Ellis, Murray Henry ..... Meadville
Emery, Henderson Donaldson ..... Butler
Fetzer, Lillian Marie ..... Meadville
Flahaven, Mary Ruth ..... Bemus Point, N. Y.
Frishkorn, Mark Wright ..... New Castle
Gill, Eleanore ..... Meadville
Hanks, Eda Gertrude ..... Meadville
Hart, Rockwell Edgar ..... Girard
Hazen, Mildred Lucile ..... Titusville
Hendershot, Elizabeth Frazer ..... Meadville

Hill, Paul Emerson ..... Emlenton
Hodgkinson, Cecil H. ..... Meadville
House, Lillian Estelle ..... Conneaut, O.
Johnson, Genevieve Cameron ..... Meadville
Johnson, Hildur Eugenia ..... Titusville
Jones, Harry Albert ..... Meadville
Kahle, Carmen ..... Oil City
Kahle, Harold Bruce ..... Parnassus
Kahle, Raymond Frederick ..... Buffalo, N. Y.
Kepner, Lee David ..... Hartford, O.
Kuhl, Harold Woolsey ..... North Girard
Kulp, Helen Marie ..... West Middlesex
Lackey, Ira Cuttler ..... Clark's Mills
Latshaw, Paul Fleming ..... Kittanning
Longanecker, Don Cameron ..... Khedive
McConnell, William Ethelbert ..... Parnassus
McKinney, Clarence Eugene ..... Meadville
Maxwell, Rachel Amanda ..... Meadville
Miller, Charles Miner, Jr. ..... Pittsburgh
Monroe, Grace ..... Meadville
Monroe, Lowell White ..... Meadville
Moore, Robert Law ..... Meadville
Mumford, Graydon William ..... Beaver Falls
Nebinger, Martha Kirk ..... Homestead
Neill, James Maffett ..... Clarion
North, Frankie Helen ..... Meadville
Pappenhagen, Albert Burnell ..... Meadville
Peckham, Harold Dexter ..... Wickford, R. I.
Pitt, Ruth Elnora ..... Ripley, N. Y.
Powell, Fred ..... Kittanning
Preston, Bessie Cecilia ..... Monessen
Reider, Kenneth ..... New Castle
Richey, Mildred Irene ..... Vandergrift
Robinson, Agnes Cannon ..... Uniontown
Scott, Genevieve Annette ..... Corry
Scott, John Bell ..... Lynchburg, Va.
Shea, Gertrude Helen ..... Meadville
Shenefelt, Arthur Merle ..... Pitcairn
Shryock, Merwin ..... Meadville
Smith, Agnes Elizabeth ..... Meadville

Smith, Louisa Crayne ..... Waynesburg
Smith, Robert Gittens ..... Barbados, West Indies
Stanfield, Arthur E. ..... Renfrew
Stolz, Pauline Gray ..... Meadville
Stone, Esther Alice ..... Butler
Strong, Leonel ..... Warren
Stroup, Gale French ..... Braddock
Swoap, Lewis Milton ..... Barnes
Sykes, Elizabeth Ritter ..... Franklin
Tarr, Jesse ..... Wellsville, O.
Thomas, Dale E. ..... Dorset, O.
Tuttle, Robert J. ..... Cattaraugus, N. Y.
Van Hoesen, Agnes Laidlaw ..... Meadville
Wagner, Charles Conroy ..... Barnes
Warner, Helen Louise ..... Meadville
Weaver, John Carson ..... Turtle Creek
Weide, Ralph Lafayette ..... New Castle
White, Anderson McLean ..... Meadville
Wilber, Albert Bennett ..... Cambridge Springs
Wise, John Laing ..... Butler
Witherup, Marion Lester ..... Franklin
Witter, George Glenn ..... Wellsville, N. Y.
Wood, Harvey Raymond ..... Pittsburgh
Yost, Robert ..... South Fork
Zuver, Dudley DeForest ..... Greenville

Sophomores, 104.

Freshmen.

Austin, John Lee ..... Meyersdale
Barcus, William Dickson ..... Edgewood Park
Baum, Helen Caroline ..... Franklin
Bellows, Paul Russell ..... North Grosvenor Dale, Conn.
Bianchi, Humbert ..... Ambridge
Bosworth, Howard Wilson ..... Corry
Brown, Douglas Hutson ..... Meadville
Brown, Mark Clemant ..... Pleasantville
Brumbaugh, Ruth ..... Franklin
Bryer, Clarence John ..... Linesville
Cain, Wilmer Patterson ..... Perry, O.
Carter, Harold Mills ..... Harbor Creek
Castle, Homer Levi, Jr. ..... Pittsburgh
Castle, John Granville ..... Pittsburgh
Cline, Byron Vito Travis ..... Apollo
Cobern, Camden Craft ..... Meadville
Copeland, Maude Elizabeth ..... Meadville
Coulsan, Harry Edward ..... Mars
Crandall, Cary Kelsey ..... Brocton, N. Y.
Davies, William Albert ..... Parnassus
Deens, Louise Ferguson ..... Beaver
Detar, Reed Leroy ..... Kellettville
Diamond, Alice Elizabeth ..... Meadville
Diamond, Helen Troy ..... Meadville
Dixon, Frances Margaret ..... Cokeville
Dowdell, Olive Sergeant ..... Beaver
Downing, Helen Louise ..... Meadville
Easterwood, Helen Cullum ..... Meadville
Elder, Myrtle Nina ..... Saybrook
Emery, Esther Louise ..... Mercer
English, Eva Janette ..... New Castle
Engstrom, Gustav Evan ..... Kane
Fogo, Helen Pauline ..... Wellsville, O.
Freer, Isabel ..... Galion, O.
Gartner, Annetta ..... Meadville
Gaston, Roland Emerson ..... Meadville
Graham, Carl ..... Meadville
Hammerton, Ruth Florence ..... Meadville
Hartung, George Michael, Jr. ..... Evans City

Hazen, John Wallace ..... Hartstown
Heckman, James ..... Reynoldsville
Holmes, Erwin Lawrence ..... Cleveland, O.
Howell, Jessie Elizabeth ..... Buffalo, N. Y.
Hulin, William Whann ..... Franklin
Hutchison, William James, Jr. ..... Ambridge
Irvin, Glenn Warren ..... McKeesport
Isherwood, James Ernest ..... Canonsburg
Jones, Warren Harold ..... Kellettville
Kelley, Ernest Jasper, Jr. ..... Chandler's Valley
Kelley, Ethyl Marie ..... Butler
Kelley, Malcolm Francis ..... Meadville
Kinney, Alfred James ..... Meadville
Klingler, Marion ..... Pittsburgh
Lackey, Scott Richard ..... Clark's Mills
Lane, Paul Warren ..... Turtle Creek
Linn, Hazel Bell ..... Espyville Station
McCloskey, Rodney Smith ..... Meadville
McConnell, Anna McCullough ..... Parnassus
McCreary, Robert Emmett ..... Monaca
McLain, Helen Elizabeth ..... Fredericktown
Mason, Dorothy Elizabeth ..... Meadville
Megahan, Donald Bruce ..... Wilkinsburg
Middleton, Estes Harold ..... Erie
Miller, Marion Frances ..... Butler
Minnium, Byron Biddle ..... Meadville
Mintz, Anna ..... Pittsburgh
Mitchell, Russell Lee, Jr. ..... Bellevue.
Mondereau, Pearl ..... Meadville
Moon, Helen Rose ..... Meadville
Nichols, Dorothy Winslow ..... Meadville
Olson, Lena Marie ..... Knox
Peterson, Florence Marie ..... Kane
Phillips, Russell Adam ..... Cleveland, O.
Pollard, William Michael ..... Saegertown
Pond, Frederick Logan ..... Meadville
Price, Harry Allan ..... Latrobe
Reamer, Ronald ..... Monessen
Regester, John Dickinson ..... New Castle
Rhoads, Christine Pauline ..... Butler

Richey, William Clyde ..... Titusville
Robinson, William Jabez ..... Uniontown
Row, Albert Lysle ..... Clearfield
Samson, Hudson Gilmore ..... Pittsburgh
Saxton, Norene Roberta ..... Jamestown, N. Y.
Scannell, Martin James ..... Athens
Shorts, Hallie Daniel ..... Saegertown
Siggins, Marion Lucile ..... Meadville
Simcox, Janet Haxton ..... Sandy Lake
Simpson, Gertrude Alice ..... New Brighton
Singleton, Paul Raymond ..... Parnassus
Singley, Adelaide ..... Meadville
Smith, Harold Leroy ..... Meadville
Spangle, Charles William ..... Dunkirk, N. Y.
Swaney, Mary Agnes ..... Shadeland
Thomas, Marion Margaret ..... Meadville
Titus, Harry Elwood ..... Lima, N. Y.
Wiley, John Lynn ..... Greenville
Wiltsie, Harold Martin ..... Ashville, N. Y.
Wissinger, Harry Lawrence ..... Pitcairn
Wood, Irene Permilla ..... Pittsburgh
Woodard, Kersey Mendenhall ..... Linesville
Young, George Kenneth ..... Parnassus

Freshmen, 102.

Special Students.

Hartman, Ruth ..... Meadville
Lockwood, Mary P. ..... Meadville
Runniger, Guy M. ..... Franklin

Specials, 3.

SUMMARY.

	Men	Women	
Resident Graduate	1	0	1
Seniors	59	44	103
Juniors	48	39	87
Sophomores	63	41	104
Freshmen	63	39	102
Special	1	2	3
Total	235	165	400

DEGREES CONFERRED
June 17, 1914.

Doctor of Laws.

Harvey Henderson

Doctor of Divinity.

Rev. James Edward Bird
Rev. Norris A. White
Rev. William Freeman Compton

Master of Arts

Harry M. Brown

Bachelor of Arts.

Muza Anchors
Ethel Katherine Bacon
Paul Freeman Barackman
Mary Elizabeth Bardall
Kile Boyer
Mabel Ruth Browning
Charles Sidney Burwell
Marion Agnes Carroll
William Edwin Coon
Clara Rosannah Davis
August Delp
Ruth Dodd
Charles Milton Dotterrer
Louis Edward Elbel
Stella Adda Fisher
Nellie Elizabeth Freer
Ellen May Girsham
Gertrude Lenore Hammond
Hety Linda Holt
Mary Helen Hotson
Sara Althea Hunt
Morey Potts Jeffery
Paul William Johnston
Hazel Gay Kellogg
Winfield Scott Lane
Paul Lindberg
James Reese MacGowan
Rodney Dean Mosier
Gertrude Anna Mueller
Pierrepont Herrick Nichols
Ottie Albert Parmenter
Nathan LeRoy Ramsey
Caroline Lois Rea
Gertrude Reed
Jessie Stoner Reed
Ruth Mildred Ricker
Paul Robinson
George DeWitt Rose
Mary Moorhead Sansom
Margaret Seitz
Gertrude Miriam Shryock
Rachel Eleanor Smith
Charles Leonard Strauss
Clair Sweetland

John Theodore Taylor
Isabella Thoburn
Theodore Thoburn
Thomas Wilson Thoburn
Mary Helen Thomas
Paul Eugene Thomas
Ada Belle Thompson
Charles Roland Walker
Marie Waring
Everett Steele Weidle
Thelma Ora Weissenborn
Bernice Wilkins

Bachelor of Science.

Ben Raymond Beisel
Banks Bon Breckenridge
Charles William Cares
Clarence James Carr
Isadore Cohen
Robert Crawford
Frederick William Fabian
Walter Hanchett Fegely
Fearl Cecil First
James Hebron Graham, Jr.
Edgar Robert Harper
William Lawrence Henry
Paul Vorse Kline
Fred Joseph Mechlin
Jonter Arthur Nicholls
Samuel Harry Norton
Willard Deichmann Parsons
John Clarence Pierson
Harry Floyd Ramsey
Frank Alvin Richard
Louis Wells
William Alonzo Whiting

PHI BETA KAPPA.

ETA CHAPTER OF PENNSYLVANIA.
Chartered September 2, 1901.

OFFICERS.

President.
President William H. Crawford.

Vice President.
Hon. John J. Henderson.

Secretary.
Professor William A. Elliott.

MEMBERS INITIATED IN JUNE, 1914.

From the Senior Class.

Ethel Katherine Bacon
Paul Freeman Barackman
Charles Sidney Burwell
Ruth Dodd
Sara Althea Hunt
Paul William Johnston
James Reese MacGowan
Pierrepont Herrick Nichols
Mary Moorhead Sansom

From the Alumni.

Francis Louis La Bounty, '07.

Annual Address, June 15, 1914.

Professor James A. James, Ph. D.
Subject, "History and the Teaching of Patriotism."

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THE COLLEGE BULLETIN

SERIES XV, No. 1
FEBRUARY, 1916

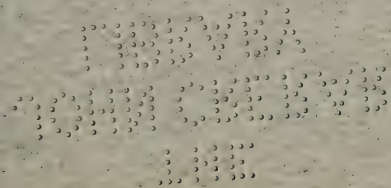
CATALOGUE

1915-1916

ALLEGHENY COLLEGE

FOUNDED IN 1815

87



ONE HUNDRED AND FIRST YEAR

CATALOGUE

OF

ALLEGHENY COLLEGE

FOR

1915-1916

MEADVILLE, PA.
1916

THE ALLEGHENY COLLEGE BULLETIN

PUBLISHED QUARTERLY BY THE COLLEGE.

SERIES XV, No. 1.
FEBRUARY, 1916.

Entered as second-class matter in the postoffice at Meadville, Pa.

CATALOGUE FOR THE ACADEMIC YEAR 1915-16

AND ANNOUNCEMENTS OF COURSES FOR 1916-17

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1916

APRIL

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1917

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CALENDAR.

1916.

April 24, Monday—Founders' Day.

28, Wednesday—Last day for Presenting Senior Orations and Theses.

May 10, Wednesday—Choice of Senior Speakers.

30, Tuesday—Memorial Day, a holiday.

June 1-10, Second Term Examinations.

11, Sunday, 10:45 a. m.—Baccalaureate Sermon by President William H. Crawford.

7:45 p. m.—Annual Sermon before the Christian Associations.

12, 13, Monday and Tuesday—Entrance Examinations.

12, Monday, 2:00 p. m.—Class Day Exercises.

4:00 p. m.—Annual Meeting of the Phi Beta Kappa Society.

7:30 p. m.—Phi Beta Kappa Address.

9:00 p. m.—President's Reception.

13, Tuesday, 9:00 a. m.—Annual Meeting of the Board of Trustees.

4.00 p. m.—Organ Recital.

7:30 p. m.—Commencement Concert.

14, Wednesday, 9:30 a. m.—Commencement Exercises.

1:00 p. m.—Meeting of the Alumni Association. Annual Dinner.

6:00 p. m.—Fraternity Banquets.

SUMMER VACATION.

1916.

Sept. 19, Tuesday—First Term Begins.

18, 19, Monday and Tuesday—Entrance Examinations.

19, Tuesday—Registration of New Students.

20, Wednesday—Registration of Old Students.

21, Thursday, 8:00 a. m.—Recitations Begin.

Nov. 1, Wednesday—Last Day for Submitting Subjects of Senior Orations and Theses.

30, Thursday—Thanksgiving Day, a holiday.

Dec. 15, Friday, 5:00 p. m.—Recitations Close.

CHRISTMAS RECESS.

1917.

Jan. 3, Wednesday, 8:00 a. m.—Recitation Resumed.

10, Wednesday—Last Day for Presenting Senior Orations and Theses.

Jan. 24-Feb. 2—First Term Examinations.

Feb. 2, Friday, 4:00 p. m.—First Term Ends.

Feb. 6, Tuesday—Second Term Begins. Registration of Students.

7, Wednesday, 8:00 a. m.—Recitations Begin.

8, Thursday—Wakefield Oratorical Contest.

22, Thursday—Washington's Birthday, a holiday. The College Dinner.

Mar. 7, Wednesday—Last Day for Submitting Subjects of Senior Orations and Theses.

Mar. 23, Friday—Philo-Franklin Oratorical Contest.

April 6, Friday, 5:00 p. m.—Recitations Close.

SPRING RECESS.

April 17, Tuesday, 8:00 a. m.—Recitations Resumed.

24, Tuesday—Founders' Day.

25, Wednesday—Last Day for Presenting Senior Orations and Theses.

May 10, Thursday—Choice of Senior Speakers.

June 19, Wednesday—Commencement.

BOARD OF TRUSTEES.

Ex-Officio.

HIS EXCELLENCY MARTIN G. BRUMBAUGH,
Governor of the Commonwealth.
HON. D. NEWLIN FELL,
Chief Justice of the Supreme Court.
HON. FRANCIS SHUNK BROWN,
Attorney General.

HARVEY HENDERSON, LL.D.,	Pittsburgh
JOHN J. HENDERSON, LL.D.,	Meadville
*THEODORE L. FLOOD, D.D., LL.D.,	Meadville
REV. JOSEPH HORNER, D.D., LL.D.,	Pittsburgh
REV. JOSEPH W. MILES, D.D.,	Beaver Falls
JOHN C. BARDALL,	Moundsville, W. Va.
FRANK A. ARTER,	Cleveland, O.
JAMES P. COLTER,	Meadville
JAMES W. KINNEAR,	Pittsburgh
GORTON B. CHASE,	Greenville
REV. THOMAS H. WOODRING, D.D.,	Irwin
REV. ANDREW C. ELLIS, D.D.,	Meadville
REV. WILLIAM H. CRAWFORD, D.D., LL.D.,	Meadville
JOHN E. RIGG, M.D.,	Wilkinsburg
EDWARD APPLEYARD,	Jamestown, N.Y.
WESLEY B. BEST,	Meadville
JOHN V. RITTS,	Butler
CHARLES MILLER,	Franklin
JOHN S. CRAIG,	Pittsburgh
AUSTIN BLAKESLEE,	DuBois
REV. NOBLE G. MILLER, D.D.,	Blairsville
NELSON A. RIST,	Dawson
JOHN J. CARTER,	Titusville
ARTHUR L. BATES,	Meadville
SIMPSON S. FORD,	Cleveland, O.
*ROBERT B. WARD,	New York

*Deceased.

C. E. Welch, ... Westfield, N. Y.
Bishop James M. Thoburn, D.D., LL. D., Meadville
Sarah B. Cochran, ... Dawson
Rev. Robert M. Freshwater, D.D., Cleveland, O.
George Greer, ... New Castle
Byron A. Walker, ... Erie
W. S. Horner, ... Pittsburgh
Rev. J. M. Thoburn, D.D., . . . Ben Avon
Rev. C. W. Miner, D.D., . . . DuBois
Ida M. Tarbell, ... New York
Arthur W. Thompson, . . . Baltimore, Md.
Will N. Ridge, ... New York
*William J. Armstrong, M.D., . . . Kane
J. W. Fawcett, M.D., . . . McKeesport
Edward B. Heckel, M. D., . . Pittsburgh
A. D. Deemer, ... Brookville
C. H. Bagley, ... Corry
Paul Sturtevant, ... Pittsburgh
James Thomas, ... Johnstown

Officers of the Board.

Frank A. Arter, ... President
John J. Henderson, . . . Vice-President
James P. Colter, ... Secretary

Executive Committee.

William H. Crawford, ... Chairman
James P. Colter, ... Secretary

Frank A. Arter.

Wesley B. Best Arthur L. Bates

Treasurer of the College.

George D. Thomas.

---

*Deceased.

FACULTY.

WILLIAM H. CRAWFORD, D.D., LL.D.,
PRESIDENT,
Professor of Ethics.

WILLIAM A. ELLIOTT, A.M., L.H.D.,
Professor of Greek Language and Literature.

ERNEST ASHTON SMITH, Ph.D.,
Alumni Professor of History and Economics.

CLARENCE F. ROSS, A.M.,
Bradley Professor of Latin Language and Literature.
SECRETARY.

FRANK C. LOCKWOOD, Ph.D.,
Eliza Kingsley Arter Professor of English Language and Literature.

GEORGE A. MULFINGER, Ph.D.,
Professor of German Language and Literature.

CAMDEN M. COBERN, Ph.D., Litt.D.,
James M. Thoburn Professor of English Bible and Philosophy of Religion.

CHARLES J. LING, Ph.D.,
Mary M. Newton Professor of Physics and Astronomy.

OSCAR P. AKERS, Ph.D.,
Francis Asbury Arter Professor of Mathematics and Surveying.

RICHARD EDWIN LEE, Sc.D.,
Professor of Chemistry.

GUY E. SNAVELY, Ph.D.,
Professor of Romance Languages and Literatures.
REGISTRAR.

ALICE HUNTINGTON SPALDING,
Instructor in Public Speaking.
DEAN OF WOMEN.

CHESTER A. DARLING, Ph.D.,
Professor of Biology and Geology.

CHARLES E. HAMMETT,
Professor of Physical Education and Director of Athletics.

FREDERICK G. HENKE, Ph.D.,
Acting Professor of Philosophy and Education.

CHARLES E. DECKER, A.M.,
Assistant Professor of Biology and Geology.

STANLEY S. SWARTLEY, A.M.,
Assistant Professor of English.

HOWARD PENNINGTON STEMPLE, A.M.,
Assistant Professor of Economics and Political Science.

EDITH ROWLEY, A. M.,
Librarian.

KARL A. MILLER, B.S.,
Instructor in Mathematics and Surveying.

DANIEL H. G. MATTHAEI, A.B.,
Instructor in German.

ROBERT CALVIN WARD, A.M.,
Instructor in French.

WALTER H. FEGELY, M.S.,
Instructor in Chemistry.

WILLIAM VANCE McCAY, A.M.,
Instructor in Greek and Latin.

JOHN BRIGHT, B.S.,
Graduate Assistant in Biology.

HOMER R. JACOBS, A.B.,
Graduate Assistant in Chemistry.

FRANK H. REICHEL, B.S.,
Graduate Assistant in Chemistry.

GEORGE A. RICKER, B.S.,
Graduate Assistant in Chemistry.

LOUISE CHASE, A.B.,
Graduate Assistant in French.

M. L. WITHERUP,
Laboratory Assistant in Biology.

CHARLES A. AEY,
Laboratory Assistant in Physics.

COMMITTEES OF THE FACULTY.

Registration.

THE PRESIDENT — THE REGISTRAR
PROFESSOR ROSS — PROFESSOR LEE
PROFESSOR COBERN

Courses of Study.

PROFESSOR ELLIOTT — PROFESSOR LOCKWOOD
PROFESSOR MULFINGER — PROFESSOR LING
PROFESSOR HENKE

Discipline.

THE PRESIDENT — PROFESSOR ELLIOTT
PROFESSOR SMITH

College Organizations.

PROFESSOR AKERS — PROFESSOR ROSS
PROFESSOR SMITH

Library.

PROFESSOR LOCKWOOD — PROFESSOR MULFINGER
PROFESSOR ELLIOTT

Graduate Instruction.

PROFESSOR DARLING — PROFESSOR SNAVELY

Athletics and Gymnasium.

PROFESSOR LEE — PROFESSOR HAMMETT
MR. WARD

Accredited Preparatory Schools.

PROFESSOR ROSS — PROFESSOR COBERN
PROFESSOR DARLING

College Book Store.

PROFESSOR LEE

Catalogue.

PROFESSOR SNAVELY — PROFESSOR SWARTLEY
PROFESSOR DECKER

College Council.

PROFESSOR LING — PROFESSOR AKERS

Men's Dormitories.

PROFESSOR SMITH — PROFESSOR HAMMETT

DESCRIPTION OF THE COLLEGE.

HISTORICAL SKETCH.

Allegheny College was founded in 1815 by citizens of Meadville, then a frontier village of some three or four hundred inhabitants. The first president was the Rev. Timothy Alden, a Presbyterian minister. The institution was chartered in 1817, and in 1820 the corner stone of the first building, Bentley Hall, was laid. In 1831 Dr. Alden resigned, and in 1833 the Rev. Martin Ruter, of the Pittsburgh Conference of the Methodist Episcopal Church, was elected to the presidency. The institution, while pronouncedly Christian, is conducted as the charter requires, on liberal principles, no person having any advantage, or being subjected to any disadvantage, on account of his religious views.

LOCATION.

Allegheny College is located in Meadville, Pennsylvania, on the main lines of the Erie and the Bessemer & Lake Erie railroads. An electric road gives direct connection with Erie and intervening points. Meadville has a population of about fifteen thousand. It is an old, well-established town, with attractive streets and residences, cultured society, and many educational influences. Being largely a residential town it has few of the disadvantages of city life. It has most

of the advantages of a city, such as paved streets, an effective sewerage system, an abundant supply of wholesome water from driven wells, arc and incandescent electric lights, natural gas, and an electric street railroad connecting all parts of the town with the college grounds.

The surrounding country is remarkable for its beautiful and diversified scenery. Within a short radius are some twenty miles of wild and rugged ravines of exceeding beauty, and the foothills of the Alleghenies which surround the town make the situation one of great attractiveness. The neighborhood is especially rich in material for the study of botany and geology.

BUILDINGS AND GROUNDS.

The college campus contains sixteen acres on the north edge of the town, nearly a mile from the business section, at an elevation of two hundred feet above French Creek and twelve hundred and fifty feet above the sea. It is abundantly shaded by numerous varieties of trees, many of them planted by students nearly a century ago. The ravine which passes through the campus and the situation overlooking the town and the valley for miles below, give a natural beauty hardly surpassed. The grounds are well provided with cement walks, and both grounds and buildings are kept in an attractive and sanitary condition.

The heating plant, situated in the upper ravine, supplies steam heat to all the college buildings. It is entirely adequate to the needs of the college.

Bentley Hall bears the name of the Rev. William Bentley, D.D., of Salem, Massachusetts, who gave

his valuable library to the college. The corner stone was laid in 1820. It consists of a central three-story building with tower, and two wings with massive pillars. The building contains the administration offices of the college and recitation and lecture rooms. The third floor is devoted to the halls of the literary societies.

During the summer of 1905 extensive improvements were made in the interior of the building. New hard wood floors and oak wainscoting were put in, and new furniture throughout has been provided. These changes, made at a cost of about seven thousand dollars, have rendered the building very attractive and entirely modern, without lessening its charm as a fine example of colonial architecture.

Ruter Hall, which bears the name of the Rev. Martin Ruter, D.D., the second president of the college, is a substantial brick building, erected in 1855, chiefly by the citizens of Meadville. On the first floor is the geological museum of the college. On the second floor are recitation rooms, a drawing room, an instrument room, and an office, used by the department of Mathematics and Surveying. The third floor, occupied by the department of Philosophy and Education, contains a lecture room, two laboratories, two offices and a store room.

Hulings Hall, a four-story brick building, ninety-four by one hundred forty feet, was erected in 1881, by Mr. Marcus Hulings, of Oil City, and citizens of Meadville. It is used as a home for young women, and accommodates about ninety. The building is well lighted and ventilated, is provided with fire escapes,

and is in thoroughly good sanitary condition. It has recently been almost entirely refurnished. The rear wing of the building contains on the fourth floor five large society halls; the first and second floors are occupied by the gymnasium for young women. The gymnasium has a clear floor space fifty-four by forty feet and is finished throughout in Georgia pine. It is provided with a full line of modern apparatus. In the basement are dressing rooms and baths.

Wilcox Hall of Science, named for Mr. and Mrs. Robertson Wilcox, of Girard, Pa., is a modern brick building built in 1892 for the department of Physics. It contains an amphitheatre lecture-room, seating one hundred students, physical laboratories, and a basement work shop. There are ten working rooms. In the construction of the building especial care was taken to provide abundant light.

The Gymnasium, erected in 1896, adjoins the athletic field. It is in the early Italian style of round arched architecture, and is constructed of native stone and brick. The building is T-shaped in plan, the front portion being two stories high, exclusive of the tower. The first floor contains the director's room, locker rooms, and baths. On the second floor there is an assembly room, and also a committee room, both for general use. The gymnasium floor, which occupies the rear extension, has a clear space of forty-five by eighty feet unobstructed by pillars, the roof being supported by steel trusses. The building is equipped with the appointments of a first-class modern gymnasium.

Newton Observatory, completed in 1901, was made

possible by the gift of Mrs. Mary M. Newton, of Batavia, Illinois, in memory of her husband, Captain D. C. Newton, once a student in the college. It is a rock-faced stone building of fine architectural appearance, containing in addition to the observing room, a transit room, a computing room, and the director's office.

Ford Memorial Chapel was erected in 1901-2 through the generosity of Captain John B. Ford, of Creighton, Pa., in memory of his wife. It is of rock-faced Cleveland sandstone, in Gothic Romanesque style, with a spacious auditorium seating four hundred and fifty, besides a gallery seating one hundred and fifty, and an oratory seating one hundred and fifty. The rich stained glass windows and the harmonious interior appointments add much to the stateliness of the building.

The chapel is provided with a splendid pipe organ, the gift of the granddaughters of Captain Ford, Mrs. J. A. Ballantyne and Misses Nellie and Stella Ford, who contributed $6,000 for this purpose. The organ was designed by Mr. W. L. Mayer, of Pittsburgh, and was built by the late Julius Neef, of Philadelphia. It has three manuals and 1,920 pipes, and is supplied with the best devices of great modern organs.

The Library Building, the gift of an anonymous donor, was completed in 1902. Its dimensions are eighty-five by seventy-four feet. It is constructed of vitrified brick with terra cotta trimmings, in Italian-Renaissance style. In addition to the stack room with a capacity of sixty thousand volumes, it contains a cataloguing room, librarian's rooms, general reading

room, and a large reference reading room. On the second floor are the faculty room and the department seminar rooms. The interior appointments of the library are entirely in accord with the artistic character of the building.

Cochran Hall. By the generous gift of Mrs. Sarah B. Cochran, of Dawson, Pa., provision has been made for a College Commons for young men. The building is constructed of brick, with light terra cotta trimmings and tile roof. The architecture is of the Italian villa style with simple dignified lines, making the building, as a whole, the most imposing of the entire college group. The building contains on the first floor a reception hall, a main dining room, and a large lounging room for general purposes. The second floor is devoted to students' studies, sleeping rooms, and baths, and to a guests' suite. The building not only provides first class boarding accommodations, and at reasonable rates, but also constitutes a rallying center for the young men of the college. Apart from the dining room and the provisions for a dormitory, there are rooms for the Young Men's Christian Association, which are admirably adapted to their purpose. In addition to the spacious room to be used as assembly, reading, and social room there are an office for the secretary, a committee room, and a cloak room. Just off these apartments are four bowling alleys with shuffle board spaces adjoining.

Alden Hall. Since the burning of this building in 1915 it has been rebuilt and greatly enlarged into a modern two story structure for the department of Biology and Geology. Constructed of gray vitrified

brick and terra cotta and roofed with red Spanish tile, it forms an imposing building 60 feet wide by 120 feet long, with the main entrance on George Street. The spacious halls lined with cases for the display of biological specimens, the rough sand finish of the walls, and the stained-oak wood-work and furnishings produce a most pleasing interior.

The building is divided on the first floor into a large lecture room in the east end, a library, professor's office, two private laboratories, and four advanced laboratories; on the second floor into four large laboratories, two store rooms, an office, and a vivarium. The basement contains six rooms which are used by the department for aquaria, work shop, store rooms, etc. The building is exceptionally well-lighted and is well-equipped with tables, lockers, apparatus, etc. Electric lights, water, and gas are supplied to all of the rooms.

Carnegie Hall of Chemistry. This building is the latest addition to the group of college buildings and is devoted entirely to the use of the department of Chemistry. The erection of the building was made possible by a gift of $40,000 by Mr. Andrew Carnegie. This contribution was made with the understanding, however, that the trustees of the college add $10,000 to this sum for the building and, furthermore, that an additional $20,000 be raised for the purpose of providing a definite income for the maintenance of the building. The trustees not only met the terms of the gift but immediately appropriated a generous sum to be used for the purchase of adequate equipment of the laboratories.

With the completion of this building late in the year 1915, the college came into possession of a $70,000

plant for chemistry, not including the equipment, which will amount to approximately $20,000.

The building is constructed of buff tapestry brick with artificial stone trimmings, in the Italian villa style. The roof is of red Spanish tile. The interior structure is entirely of pressed steel. Owing to the fact that it was deemed advisable for hygienic purposes to substitute heavy four-inch wooden floors for cement, it is necessary to describe the building as "slow-burning construction."

There are twenty-four rooms in the building. All these rooms have been equipped as offices for members of the instructing staff, or as laboratories for the general courses in chemistry and for research work. The building is supplied with electricity, both A. C. and D. C., high pressure steam for operating steam-baths, and with that which appears to be a satisfactory system for ventilating hoods and laboratories.

LABORATORIES AND MUSEUM.

The Physical Laboratory. The department of Physics occupies Wilcox Hall of Science. It comprises a large, well-lighted lecture-room; a general laboratory; special laboratories for heat, light, and electricity; two dark rooms; the professor's office; and department library and store room. The lecture-room is well adapted to the giving of illustrated lectures; and the department has a very complete projection outfit and a good collection of slides. The department has also the facilities for the construction of special pieces of apparatus needed in the laboratory.

The Chemical Laboratories. The department of Chemistry occupies the building known as Carnegie

Hall of Chemistry. It consists of twenty-four rooms. On the first floor are located the offices of the instructing staff; reading room containing department library; laboratories for electro-chemistry, quantitative analysis, metallurgial chemistry, physical chemistry, water analysis, gas and fuel analysis; and the hygienic laboratory. The balance room, which is provided with suitable piers, is also located on this floor. On the top floor are found separate laboratories for general chemistry, qualitative analysis, spectrum analysis, and organic chemistry; stock room, preparation room, combustion room, and the large lecture room. In the basement, which has been finished as the two upper floors with the exception of the cement floor, are located the laboratory for agricultural chemistry, small lecture room, stock rooms, and work-shops. The desks in all the laboratories are provided with outlets for compressed air, electricity, A. C. and D. C., as well as gas, water and vacuum pumps. The steam baths, which are supplied with high pressure steam, and the hydrogen sulphide outlets are located in glazed hoods, which are ventilated by forced draughts.

The Astronomical Observatory is equipped with a nine-inch equatorially mounted telescope, the objective of which was a gift of Mr. J. C. McDowell, of Pittsburgh, and was made by Brashear, of Allegheny, Pa. The graduated silver circles for this telescope were given by Mrs. Elizabeth Whiting, of Meadville. A seven and one-half inch instrument, made by Alvin Clark and Son, is also included in the equipment. Other equipment includes a transit, a chronometer, a sextant, and a sidereal clock. The clock is the gift of the children of Milton B. Goff, LL. D., in memory of

their father, an alumnus and former professor of mathematics in the college. The mountings and other fixtures of the observatory were supplied by Messrs. Warner and Swasey, Cleveland, O.

Through the generosity of Colonel J. J. Carter, of Titusville, Pa., there has been added to the equipment of the observatory an elaborate filar micrometer for use with the nine-inch, designed and made by George N. Saegmuller, of the Bausch-Lomb-Saegmuller Co., of Rochester, N. Y. From the same source comes a high grade six-inch mining transit fitted with a Saegmuller solar attachment and a Shattuck solar attachment, thus enabling the department to prosecute field work in astronomy which is of value to engineers. A chronograph, made by Gaertner, of Chicago, and a break circuit attachment for the clock complete the new equipment, which will enable the department to offer to the student work that will be comparable with other observatories having a glass of like magnitude.

Surveying Apparatus. In Mathematics and Surveying all necessary instruments, such as transits, levels, rods, and chains, for illustrating pure and applied mathematics are provided and are in practical use by the students in these subjects.

The Biological Laboratories, formerly located in restricted quarters on the third floor of Ruter Hall, now occupy, together with Geology, the entire building of Alden Hall, which has been rebuilt and greatly enlarged. This change has greatly increased the number of laboratories and has materially added to the efficiency of the department.

The laboratory for general biology is on the second floor; it is well lighted by north windows and is well equipped with modern laboratory tables, individual lockers, compound microscopes, and other apparatus necessary to accommodate the large number of students who elect this work. Adjoining this general laboratory is a laboratory for advanced zoology, in which hundreds of specimens illustrating the various orders of animals are displayed. On the south side on this floor is the vivarium, in which are still-water aquaria and insect cages; in the northwest corner is a large laboratory for advanced botany and for economic biology; this laboratory contains the herbaria of the local flora, including fungi, mosses, ferns, and seed plants; also hundreds of micrscopic slides for use in these courses.

On the first floor is the large lecture hall supplied with student chairs, a balopticon with several hundred slides, and numerous wall charts; adjoining this room are the professor's private laboratory and a preparator's room in which demonstration material is prepared and stored. The bacteriological laboratory on this floor is equipped with lockers, two steam-pressure autoclaves, a multi-compartment, electrically heated incubator, hot-air sterilizers, microscopes, etc. Adjoining this room is the laboratory for histology and embryology supplied with microtomes, multi-compartment paraffin oven, incubators, compound microscopes with oil-immersion lenses, and other necessary apparatus. The laboratory for plant physiology is well equipped with apparatus for studying soils, for seed testing, etc. Opening from this room are a conservatory for growing plants and also a dark room for photographic and

experimental purposes. A library with the departmental books and magazines, an advanced bacteriological laboratory, professor's office, and a store room complete the rooms of the first floor.

In the halls are displayed numerous cases of birds, insects, skeletons, dissected and injected specimens, models, illustrative and museum material of various kinds. The laboratories throughout are equipped with microscopes and the necessary apparatus to carry on th work of the various courses offered by the department. The tables are supplied with electric desk lamps for use on cloudy days.

In the basement is a room with running-water aquaria for fish and amphibians, and several cages for mice used for demonstration work in heredity; a work shop and store rooms are also in the basement. In the rear of the building is a plot of ground which is to be developed into a botanical garden.

The Geological Laboratory is on the second floor of Alden Hall. It contains laboratory tables equipped for blowpipe work and provided with lock drawers for each student. The room is large and well lighted, and is supplied with electricity, gas, running water, and cases for maps, minerals, rocks, and reagents. Other equipment for geological and mineralogical work consists of several hundred topographic maps and geologic folios, several thousand minerals and rocks for both demonstration and working collections, crystal models, polarizing microscope, rock slides, a lantern with numerous slides, and a collection of fossils arranged in order of the geologic periods. This collection has been augmented materially by the gift of fos-

sils from Montana by Mr. Walter M. Small and by the gift and exchange of fossils by others.

A large room in the basement is used for the preparation and storage of minerals, rocks, and fossils.

The geological library consisting of several hundred volumes of government, state, and other publications is in the department library on the first floor of Alden Hall.

The Natural History Collections are placed in the museum on the first floor of Ruter Hall and in Alden Hall. The geological and mineralogical collections are especially noteworthy and contain many valuable specimens, including several type forms. The more than eight thousand mineral specimens form an excellent collection and serve as a splendid basis for the course in mineralogy. The geological collections include the Smithsonian set of rocks and rock-forming minerals, besides numerous other specimens; while the paleontological collection includes the Ward casts and several original fossil forms. A collection of fossils, both local and from the glacial drift, was presented to the college by Mr. William Millward.

The biological collections are also important. The herbarium has been greatly increased so that it includes most of the local flora, which is rich and varied and furnishes an abundance of material for the courses in Botany. The zoological collection consists of several thousand specimens. It includes an excellent collection of shells, over two hundred mounted birds, several cases of economic insects, mounted skeletons, and numerous jars of prepared and injected specimens illustrating the various orders of animals.

The museum is open to the public on every Saturday from ten-thirty until noon while the college is in session. At other times visitors are admitted on application to the curator.

THE LIBRARY.

The Library contains over 40,000 printed productions, of which 30,000 are bound volumes. The remainder is made up of unbound periodicals and classified pamphlets. The additions by gift and purchase during 1913-14 were over 2000 volumes. A large number of reference books of a general and technical nature were added to the good collection in the reference room, where 2000 volumes of books "reserved" for use in the various departments are shelved with the dictionaries, encyclopaedias, and general reference works. A dictionary card catalogue, and periodical and government document indexes make the general resources and the latest periodical information easily available. Especial attention has been given to completing the bound sets of the most valuable periodicals. The departments of Chemistry, Physics, Biology, Geology, and Astronomy have their several department libraries in the buildings where the work is done, and additions are made to these collections each year. The Library possesses many rare old books from the Winthrop, Thomas, and Bentley foundations and a number of valuable old Bibles.

The following moneys have been given to create funds for the support of the Library:

Andrew Carnegie Fund $25,000

The income of this fund is to be used for general maintenance.

Lucy Prindle Foote Fund 5,000
A gift of Mrs. Lucy P. Foote, of Batavia, Ill., the income to be used for the purchase of books.

William Davis Memorial Fund 5,000
A gift of Mr. Henry L. Davis, of Philadelphia, Pa., in memory of his father, Mr. William Davis, the income to be used for the purchase of books.

Rev. Lynn Olin Mead Fund 500
A gift of Mrs. Martha S. Mead in memory of her late husband, the Rev. Lynn Olin Mead, the income to be used for the purchase of books.

The Library is housed in a modern building with large reading and study rooms, fitted with electric lights and steam heat. The administration aims to make the Library not only an auxiliary to the class instruction but also the center of the intellectual life of the college. The classical and literary clubs have headquarters in the building, and rooms are set aside for advanced classes studying along special lines; the rules are such as will allow the widest use of the books with only such necessary restrictions as will secure the greatest good to the greatest number. The reading room regularly receives over one hundred periodicals, including technical department journals and dailies from the great cities and the best weeklies, both religious and secular. In addition to a very comprehensive list of the best home and foreign periodicals, the Campus and the Literary Monthly maintain an exchange table of college publications.

The Library is a government depository and also receives the state publications. Each department has an annual appropriation for the purchase of the latest technical and reference works. The access to such a wide range of books and periodicals, the training in the use of catalogues, bibliographies, reference works, and the wide range of technical and general periodical literature available are of great advantage to the student. A book service is maintained with the Carnegie Library of Pittsburgh by which almost any book not available here may be secured quickly and at slight expense to the student. Exchange relations are also maintained with several other libraries. The Meadville Theological School extends library privileges to this college, and the students have access to the Meadville Public Library, containing over 12,000 catalogued volumes.

The Library is open during the college year from 8 a. m. to 5:30 p. m. and three evenings a week.

GENERAL PURPOSE.

This institution is a college, not a university. It does not undertake to fit the student to enter a profession without further technical study. In all departments of instruction the end sought is not specialization but thorough discipline and correct habits of observation and reflection. It is on this principle that the curricula are based. Under the various groups about three-fourths of the subjects are prescribed. These studies are such as have been found to be best adapted to secure symmetrical development. A wide range of electives is offered, enabling the student to lay the foundation for subsequent professional study. By a wise choice of electives a student may in some cases shorten by a year the time required to complete his professional course. The experience of the college proves that its graduates are enabled to distinguish themselves in various careers whenever they have added to their college training the special equipment for a profession.

A large portion of college graduates enter not upon professional but upon business life. The general principle above stated applies to them with as much force as to those who enter professions. A college training does not teach a man how to do business successfully, but it does prepare him to do business rapidly, and to attain large success, if he has the requisite talent.

REQUIREMENTS FOR ADMISSION.

The requirements for admission are stated in terms of units. *A unit is defined as a course of study that has been pursued for a school year of at least thirty-six weeks, with four or five periods per week of not less than forty minutes each. However, not less than one hundred twenty periods of sixty minutes each or their equivalent shall be counted a unit. But it is understood that in the major subjects for entrance five periods a week will be required.*

No science subject may be credited for entrance unless accompanied by satisfactory evidence of laboratory or field work. Exceptions may be made in the case of physiology.

Subjects accepted for entrance:

	Minimum.	Maximum.
English	3	4
Mathematics	2½	4
Foreign Language	4	7
Latin		
Greek		
French		
German		

Not less than two units in any language will be counted, unless continued further in college.

History	1	4
Ancient	..	1
Mediaeval and Modern	..	1

English	½	1
United States	½	1
Civics	..	½
Drawing		
Free Hand	..	½
Mechanical	..	½
Science	1	4
Biology	½	1½
Chemistry	..	1
Physics	..	1
Physiography	..	½
Geology	..	½

Not more than one unit of Biology may consist of General Zoology or Botany. Physiology may count as much as one-half unit.

From the preceding list of units 15 must be offered for entrance to the freshman class. Of these, 11½ units are absolutely required and 3½ may be elected from any of the units in the foregoing list.

The 11½ required units are as follows:

English	3
*Mathematics	2½
Science	1
History	1
Foreign Language	4

For admission to A. B. Groups I and II, these 4 units must be in Latin; to Groups III, IV, and V, two units must be in Latin; to B. S. Groups I-IV, there is no restriction concerning Latin.

The various groups are described on pp. 46-51.

For conditional admission in the aforementioned Latin prerequisite see page 83.

* Students may be admitted with 2 units of Mathematics, provided they offer 15 units all told; but they will be required to complete in college a half year of Mathematics in addition to the regular Science requirement.

DESCRIPTION OF UNIT REQUIREMENTS.

ENGLISH. The following is a definition of units one, two, three, and four, respectively, that may be offered as entrance credits in English:

(Unit one) Composition and Rhetoric.

(Units two and three) Selections from the list of required Readings below.

(Unit four) A history of English or American literature, with additional readings from the English classics.

The study of English in school has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

Grammar and Composition. The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, sentences, and paragraphs should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise letter-writing, narration, description, easy exposition, and argument. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student

the habit of using good English in his recitations and various exercises, whether oral or written.

Literature. The second object is sought by means of two lists of books, headed respectively Reading and Study, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads and with their place in literary history.

(A.) Reading. The aim of this course is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from each of which at least two selections are to be made, except as otherwise provided under Group 1.

GROUP I. Classics in Translation. The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther. The Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII. The Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI. The Aeneid. The Odyssey, Iliad and Aeneid should be read in English translations of recognized literary excellence. For any selection from this group a selection from any other group may be substituted.

GROUP II. Shakspere. Midsummer Night's Dream, Merchant of Venice, As You Like It, Twelfth Night, The Tempest, Romeo and Juliet, King John, Richard II, Richard III, Henry V, Coriolanus, *Julius Cæsar, *Macbeth, *Hamlet.

* If not chosen for study under B.

GROUP III. Prose Fiction. Malory's Morte d'Arthur (about 100 pages); Bunyan's Pilgrim's Progress, Part I; Swift's Gulliver's Travels (voyages to Lilliput and to Brobdignag); Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; Frances Burney's Evelina; Scott's novels, any one; Jane Austen's novels, any one; Maria Edgeworth's Castle Rackrent, or The Absentee; Dickens' novels, any one; Thackeray's novels, any one; George Eliot's novels, any one; Mrs. Gaskell's Cranford; Kingsley's Westward Ho! or Hereward the Wake; Reade's The Cloister and the Hearth; Blackmore's Lorna Doone; Hughes' Tom Brown's Schooldays; Stevenson's Treasure Island, or Kidnapped, or Master of Ballantrae; Cooper's novels, any one; Poe, selected tales; Hawthorne's The House of the Seven Gables, or Twice Told Tales, or Mosses from an Old Manse; a collection of short stories by various standard writers.

GROUP IV. Essays, Biography, etc. Addison and Steele's The Sir Roger de Coverley Papers, or selections from The Tatler and Spectator (about 200 pages); Boswell, selections from the Life of Johnson (about 200 pages); Franklin's Autobiography; Irving's selections from the Sketch Book (about 200 pages), or Life of Goldsmith; Southey's Life of Nelson; Lamb, selections from the Essays of Elia (about 100 pages); Lockhart, selections from the Life of Scott (about 200 pages); Thackeray's Lectures on Swift, Addison, and Steele in the English Humorists; Macaulay, any one of the following essays: Lord Clive, Warren Hastings, Milton, Addison, Goldsmith, Frederick the Great, Madame d'Arblay; Trevelyan, selections from the Life of Macaulay (about 200 pages); Ruskin's Sesame and Lilies, or selections (about 150 pages); Dana's Two Years Before the Mast; Lincoln, selections, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, the Letter to Horace Greeley, together with a brief memoir or estimate of Lincoln; Parkman's The Oregon Trail; Thoreau's Walden; Lowell's Selected Essays (about 150 pages); Holmes' The Autocrat of the Breakfast Table; Stevenson's An Inland Voyage and Travels with a Donkey; Huxley's Autobiography and selections from Lay Sermons, including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; a collection of essays by Bacon,

Lamb, DeQuincey, Hazlitt, Emerson, and later writers; a collection of letters by various standard writers.

GROUP V. Poetry. Palgrave's Golden Treasury (First Series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns; Palgrave's Golden Treasury (First Series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study under B); Goldsmith's The Traveler, and The Deserted Village; Pope's The Rape of the Lock; a collection of English and Scottish ballads, as, for example, some Robin Hood ballads, The Battle of Otterburn, King Estmere, Young Beichan, Bewick and Grahame, Sir Patrick Spens, and a selection from later ballads; Coleridge's The Ancient Mariner, Christabel, and Kubla Khan; Byron's Childe Harold, Canto III or IV, and The Prisoner of Chillon; Scott's The Lady of the Lake, or Marmion; Macaulay's The Lays of Ancient Rome, The Battle of Naseby, The Armada, Ivry; Tennyson's The Princess, or Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa, Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus"—, Instans Tyrannus; Arnold's Sohrab and Rustum, and The Forsaken Merman; selections from American Poetry, with special attention to Poe, Lowell, Longfellow, and Whittier.

(B.) Study. This part of the requirements is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. The books provided for study are arranged in four groups, from each of which one selection is to be made.

GROUP I. Drama. Shakspere's Julius Cæsar, Macbeth, Hamlet.

GROUP II. Poetry. Milton's L'Allegro, Il Penseroso, and either Comus or Lyciadas; Tennyson's The Coming of Arthur, The Holy Grail, and The Passing of Arthur; the selections from Wordsworth, Keats, and Shelley in Book IV of Palgrave's Golden Treasury (First Series).

GROUP III. Oratory. Burke's Speech on Conciliation with America; Macaulay's Speech on Copyright and Lincoln's Speech at Cooper Union; Washington's Farewell Address and Webster's First Bunker Hill Oration.

GROUP IV. Essays. Carlyle's Essay on Burns, with a selection from Burns' Poems; Macaulay's Life of Johnson; Emerson's Essay on Manners.

Examination. However accurate in subject-matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling, or other essentials of good usage.

The examination will be divided into two parts, one of which will be on grammar and composition, and the other on literature.

In grammar and composition, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors. The main test in composition will consist of one or more essays, developing a theme through several paragraphs; the subjects will be drawn from the books read, from the candidate's other studies, and from his personal knowledge and experience quite apart from reading. For this purpose the examiner will provide several subjects, perhaps eight or ten, from which the candidate may make his own selections. He will not be expected to write more than four hundred words per hour.

The examination in literature will include

(A.) General questions designed to test such a knowledge and appreciation of literature as may be gained by fulfilling the requirements defined under (A.) Reading, above. The candidate will be required to submit a list of the books read in preparation for the examination, certified by the principal of the school in which he was prepared; but this list will not be made the basis of detailed questions.

(B.) A test on the books prescribed for study, which will consist of questions upon their content, form, and structure,

and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

MATHEMATICS.—Elementary Algebra. (One unit or one and one-half units.) The work in this subject should include the following: fundamental operations, factors, common divisors and multiples, involution including the binomial theorem for positive integral exponents, radicals, quadratic equations, ratio and proportion, theory of exponents, and arithmetic and geometric series.

A maximum of one and one-half units may be given when the time spent in preparing to meet this requirement be at least a year and a half. It is suggested that the work of the last half-year should be done late in the preparatory school course to insure a distinct and ready articulation with the required work of the freshman year in college. It is desirable that the student should come to his college work with well formed habits of neatness and accuracy, and that he have a ready knowledge of so much mathematics as he may have studied.

Plane Geometry. (One unit.) The general properties of rectilinear figures, similar polygons, and areas, and the measurement of polygons and the circle; the solution of original exercises, including loci problems.

Solid Geometry. (One-half unit.) The relation of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, cones, and the sphere; the solution of original exercises, including loci problems.

Advanced Algebra. (One-half unit.) A somewhat more extended treatment in review of the important topics of Elementary Algebra; such as fractional and negative exponents, radicals, factoring, the theory of quadratic equations (including maximum and minimum, and simultaneous quadratic equations, ratio, proportion, the progressions, and the binomial theorem for positive integral exponents). In addition to these, the following topics should be included: permutations and com-

binations, undetermined coefficients, partial fractions, logarithms, theory of equations, including Horner's method, and the solution of numerical equations of higher degree.

Plane Trigonometry. (One-half unit.) The definitions and relations of the six trigonometric functions as ratios, proofs of formulas, especially those for the sine, cosine, tangent of the sum or difference of two angles, the relation between functions of an angle and those of double angles and half angles, inverse functions, and the solution of right and oblique triangles with applications.

LATIN.—The following requirements, as proposed by the Commission on College Entrance Requirements in Latin, have been adopted by the college:

I. AMOUNT AND RANGE OF THE READING REQUIRED.

1. The Latin reading required of candidates for admission to college, without regard to the prescription of particular authors and works, shall not be less in amount than Cæsar, Gallic War, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneid, I-VI.

2. The amount of reading specified above shall be selected by the schools from the following authors and works: Cæsar (Gallic War and Civil War) and Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust, (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid) and Ovid (Metamorphoses, Fasti, and Tristia).

II. SUBJECTS AND SCOPE OF THE EXAMINATIONS.

1. Translation at Sight. Candidates will be examined in translation at sight of both prose and verse. The vocabulary, constructions, and range of ideas of the passages set will be suited to the preparation secured by the reading indicated above.

2. Prescribed Reading. Candidates will be examined also upon the following prescribed reading: Cicero, orations for the Manilian Law and for Archias; and Vergil, Aeneid, I, II, and either IV or VI at the option of the candidate, with questions on subject-matter, literary and historical allusions, and

prosody. Every paper in which passages from the prescribed reading are set for translation will contain also one or more passages for translation at sight; and candidates must deal satisfactorily with both these parts of the paper, or they will not be given credit for either part.

3. Grammar and Composition. The examination in grammar and composition will demand thorough knowledge of all regular inflexions, all common irregular forms, and ordinary syntax and vocabulary of the prose authors read in the school, with ability to use this knowledge in writing simple Latin prose. The words, constructions, and range of ideas called for in the examinations in composition will be such as are common in the reading of the year, or years, covered by the particular examination.

The credits given are as follows: elementary Latin book, such as Collar and Daniell or Bennett, including the reading of at least fifteen pages of easy connected prose, such as Viri Romæ, one unit; Cæsar with composition, one unit; Cicero with composition, one unit; Vergil, one unit.

GREEK.—(One unit.) First Greek book and at least six chapters of Book I of Xenophon's Anabasis.

(One unit.) Xenophon's Anabasis through Book IV. Xenophon's Anabasis, Books V, VI, and VII, or Xenophon's Hellenika, Books I and II, or twelve hundred lines of Homer. Prose composition based on the texts read.

(One unit.) Homer's Iliad or Odyssey, about three thousand lines. Thorough knowledge of poetic forms and prosody. About thirty pages of Attic prose with composition based thereon.

Throughout the work in Greek, emphasis should be laid on accurate knowledge of forms and the ordinary rules of syntax, on the ability to read Greek aloud correctly and expressively, and on the ability to write rapidly and correctly in Greek simple English sentences based on the texts read.

Students expecting to enter Greek I in college should offer at least two units of entrance Greek. Students without Greek for entrance may begin the subject in Greek A and in one year be prepared to enter Greek I.

GERMAN.—(One unit.) The first year's work should comprise: careful drill in pronunciation, dictation, memorizing of easy colloquial sentences, drill in the rudiments of grammar, i. e., the inflection of nouns, adjectives, pronouns, weak verbs, and the more usual strong verbs; the use of prepositions; the simplest rules of syntax and word order; simple exercises in conversation; and the reading of from seventy to one hundred pages of a graduated text from a reader or from editions of easy texts.

(One unit.) The second year's work should comprise: the reading of one hundred fifty to two hundred pages of literature in the form of easy stories and plays; a further study of syntax; conversation based on the text read; practice in the translation into German of easy variations upon the matter read, and also in off-hand reproduction, sometimes orally and sometimes in writing, of the substance of selected passages.

(One unit.) The work of the third year includes, in addition to the courses above, the reading of about four hundred pages of moderately difficult prose or poetry, with constant practice in giving, sometimes orally, sometimes in writing, abstracts, paraphrases, or reproductions from memory of selected portions of the matter read; also grammatical drill upon the less usual strong verbs, the use of the article, and the cases, the uses of the subjunctive and the infinitive, complex sentence structure, and the uses of modal auxiliaries and participial constructions.

(One unit.) The fourth year of the study should be devoted to such works as Goethe's Iphigenie, Tasso, Hermann und Dorothea, Schiller's Wallenstein, standard prose of the grade represented by Freytag or Keller, some consideration of the chief lyric poets, prose composition, and some practice in theme writing.

FRENCH—(One unit.) First year French should comprise the following: (1) careful drill in pronunciation, which should be re-enforced by dictation and conversation in the class room; (2) study of grammar, including the more unusual irregular verbs; such as the material found in Part I of Fraser and Squair's French Grammar; (3) regular practice in putting simple idiomatic sentences into French;

(4) reading of about two hundred duodecimo pages of easy standard French, such as is to be found in the more popular French Readers, Malot's Sans Famille, Bruno's Tour de la France, the stories of Erckmann-Chatrian, etc.

(One unit.) Second year French should include: (1) continued work in dictation; (2) memorizing of short poems; (3) further practice of turning English into idiomatic French; (4) more detailed study of grammar, such as is contained in Fraser and Squair, Part II; (5) reading of some three hundred pages of standard French of gradually increasing difficulty, such as the stories and plays of About, Daudet, Labiche, Mérimée, Sand, Scribe, etc.

(One unit.) Third year French should comprise the reading of some five hundred pages of more difficult French, including some masterpieces of French drama. Moreover, the student should be able to reproduce and paraphrase into idiomatic French parts of the works read. Texts should be selected from the works of Balzac, Beaumarchais, Corneille, Hugo, Marivaux, Molière, Musset, Racine, Vigny, Voltaire, etc.

ANCIENT HISTORY.—(One unit.) To the fall of the Roman Empire. Texts—Botsford, West, Myer.

MEDIEVAL AND MODERN.—(One unit.) Texts—Myers, Robinson.

AMERICAN HISTORY.—(One-half or one unit.) Texts—Cheyney, Larned.

AMERICAN HISTORY.—(One-half or one unit.) Texts—Channing, Fiske, McMaster.

CIVICS.—(One-half unit.) Texts—Fiske, Hart.

FREE HAND DRAWING.—(One-half unit.) The candidate must possess the ability to sketch, both in outline and with shading, simple objects, such as a house, a small piece of machinery, a simple landscape, a group of geometrical figures, or an architectural ornament.

Certificates covering the above work, together with at least twenty specimen drawings, will be accepted.

MECHANICAL DRAWING.—(One-half unit.) The candi-

date must be able to make projections in plan and elevation of geometrical figures, and to prepare working drawings of simple architectural and mechanical subjects.

Certificates covering this work, together with at least twenty plates, illustrating the elements of Descriptive Geometry or of simple machine parts, will be accepted.

BIOLOGY.—Courses in Zoology, Botany, Physiology and Hygiene will also be accepted under this head provided they meet the requirements here given. Satisfactory outlines of courses are given in the syllabus published by the New York State Educational Department.

a. (One unit.) A course in General Biology extending throughout a year which shows the fundamental relationship between the animal and plant kingdoms and shows man's place in nature. A part of this course may deal with human physiology. The course must be accompanied with laboratory work and the student must be prepared to submit a laboratory notebook properly certified if required to do so.

b. (One-half to one unit.) Courses in General Zoology or General Botany of at least one half year in length. It is recommended that these be courses which deal with habits and ecological relationships as well as structure. Forms of animals or plants of local or of economic importance should be used as type forms as far as possible. Courses in Botany dealing solely with the flowering plants or courses in Zoology dealing solely with birds or insects will not be accepted. Laboratory work will be required in all cases and the student must be prepared to submit a properly certified note-book.

c. (One-half unit.) Physiology and Hygiene. This must be a one-half year course, and it is recommended that laboratory work be done with the course.

GEOLOGY.—(One-half unit.) The materials of the earth, the work of the atmosphere, ground-water, running water, snow and ice, the oceans and lakes, vulcanism and diastrophism; rock structures; the history of the geologic periods from the Archæozoic to the present. Laboratory and field work are required, for which a note-book is to be submitted.

PHYSIOGRAPHY.—(One-half unit.) The origin and sig-

nificance of the great relief features of the earth, and the topographic forms of the land; the earth as a planet; the atmosphere; the climate; weather predictions. Appropriate field and laboratory work must accompany the study of the text. Suitable text books are Salisbury's Briefer Course in Physiography, or Tarr's Physical Geography.

CHEMISTRY.—(One unit.) The candidate's preparation in Chemistry should include: (a) The study of at least one standard text-book on General Chemistry, to the end that the pupil may obtain a comprehensive view of the more important facts of Elementary Chemistry. (b) Individual laboratory note-books, certified by the candidate's instructor, must be presented.

PHYSICS.—(One unit.) The amount and extent of the class work demanded for entrance in physics may be indicated by such texts as Millikan and Gale's First Course, Hoadley's Elements, or Carhart & Chute's High School Physics. In laboratory the work should include at least thirty quantitative experiments supplementing the class work, performed by the student, and recorded in a carefully prepared note-book.

ADMISSION WITH CONDITIONS.

Students who have not fully completed the subjects specified for the course they wish to enter may be admitted to the freshman class conditionally, but not if the sum of their deficiencies exceeds one fourth of a year's work, nor if in the judgment of the Registration Committee they are not fitted to do college work to advantage. They will be admitted to such college classes as they may be qualified to enter. Under certain fixed restrictions, credit may be obtained on entrance for work done in college subjects, and such advanced credit may be offset against deficiencies in preparatory work until the latter can be removed.

SPECIAL STUDENTS.

Persons desiring to pursue studies in the college are, as a rule, required to be prepared to enter the freshman class as candidates for one of the degrees. Under exceptional circumstances, however, persons who are not candidates for a degree may be admitted as special students and allowed to pursue selected studies. Every such person will be required to satisfy the faculty that he is prepared to do, with profit, the work which he selects. Each case will be decided on its own merits.

ENTRANCE EXAMINATIONS.

Examinations for admission are held on Monday and Tuesday of Commencement week, and on Monday and Tuesday preceding the opening of the first term.

All examinations except those taken in Meadville are under direction of the College Entrance Examination Board, whose certificates are accepted in all subjects in place of examinations.

ADMISSION BY CERTIFICATE.

In place of examinations in studies required for admission to college, certificates will be accepted from approved first class high schools having a regular four years' course, in case of students regularly graduating in such a course. Certificates will also be accepted in case of graduates of a three years' high school course, provided they pass entrance examinations in not less than three units additional to their certificate.

Certificates will not be accepted in case of students who are not graduates of the school from which the certificates are presented. *Students entering by*

certificate are considered as on trial until the completion of the mid-year examination, and the right is reserved to require further preparatory work from students who are not able to make satisfactory progress in college classes.

In all cases an examination in English is required, adapted to test the student's power of correct and idiomatic expression. No one will be accepted in English whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs.

Principals of schools desiring to have their schools placed on the approved list are invited to address the Registrar of the college.

Diplomas from the Regents of the State of New York will be accepted. All other certificates must be made out on special blanks, which will be sent on application.

The applicant for admission should bring with him all laboratory note-books, exercise books, and other evidence of work done, properly certified to by the teacher.

All candidates for admission must present satisfactory testimonials of good moral character; and certificates of regular dismissal will be required from those who have been matriculated at other institutions.

Requirements for Graduation to the Degree of Bachelor of Arts.

FRESHMAN YEAR.

	First Term.	Second Term.
English I	3	3
English Bible I	1	1
*Mathematics or Science	4	4

One course from each of two of the following departments: Latin, Greek, French, German, History.

These two courses will count as part of the student's Group Electives as detailed on pp. 47, 48.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For Group I he should choose Latin and Greek.

For Group II he should choose Latin or Greek, and German or French.

For Group III he should choose French and German.

For Group IV he may choose any two of the subjects.

For Group V he should choose a language course and one in the History department.

Not less than fifteen and not more than sixteen hours are to be taken weekly.

*Candidates for the degree of Bachelor of Arts are required to elect fourteen term hours from the following courses: Astronomy I, Biology I, Chemistry I, Geology I, Mathematics I, Physics I, so that two departments are represented.

SOPHOMORE YEAR.

	First Term.	Second Term.
Mathematics or Science	4 or 3	4 or 3
History or Political Science	3	3

Group Electives [See pp. 47, 48] to make not less than fifteen and not more than seventeen hours weekly.

JUNIOR YEAR.

	First Term.	Second Term.
Philosophy II, V	3	3

This subject may be taken in the sophomore year if the student is to his major work in philosophy.

Group Electives and Free Electives, to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis in the first term and an oration in the second term. See page 98.

Group Electives and Free Electives chosen from the list on pages 99-103 to make a total for the course of not less than one hundred twenty term hours.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of A. B. Groups I, II, III, IV, V, in which his work is to be done.

The head of the department in which the major work is done becomes the student's adviser. See page 111.

A. B. Group I.

1. In one department, Greek or Latin.....20 hrs.
2. In a second department, Latin or Greek.....14 hrs.
3. In a third department, English, History, Philosophy, French, or German .....14 hrs.
4. In a fourth department, English, History, Philosophy, French, German, or Spanish..... 6 hrs.

A. B. Group II.

1. In one department, Latin or Greek.....20 hrs.
2. In a second department, French or German.....14 hrs.
3. In a third department, English, History, Philosophy, Latin, Greek, French, or German.....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin, Greek, French, German, or Spanish ..... 6 hrs.

A. B. GROUP III.

1. In one department, French or German.....20 hrs.
2. In a second department, German or French.....14 hrs
3. In a third department, English, History, Philosophy, Latin, or Greek .....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin, Greek, or Spanish..... 6 hrs.

Students who present for admission less than two units in a modern language must, if this Group is chosen, take not less than eight hours additional to the above requirements, in the language chosen for the major subject.

A. B. Group IV.

1. In one department, English or Philosophy.....20 hrs.
2. In a second department, English, History, or Philosophy .....14 hrs.
3. In a third department, Latin, Greek, French, or German .....14 hrs.
4. In a fourth department, Latin, Greek, French, German, or Spanish ..... 6 hrs.

A. B. Group V.

1. In one department, History or Economics.....20 hrs.
2. In a second department, Economics, English, History, or Philosophy .....14 hrs.
3. In a third department, Latin, Greek, French, or German .....14 hrs.
4. In a fourth department, Latin, Greek, French, German, or Spanish ..... 6 hrs.

Requirements for Graduation to the Degree of Bachelor of Science.

FRESHMAN YEAR.

	First Term.	Second Term.
English I	3	3
English Bible I	1	1
Foreign Language: French, German, Latin, or Greek	4	4
Mathematics I	4	4
Science—Biology, Chemistry, Physics, or Surveying	4	4

This course will count as part of the student's Group Electives as detailed on p. 51.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For B. S. Group I, he should choose Biology.

For B. S. Group II, he should choose Chemistry.

For B. S. Group III, he should choose Physics.

For B. S. Group IV, he should choose Mathematics or Surveying.

SOPHOMORE YEAR.

	First Term.	Second Term.
*History or Political Science	3	3
Foreign Language, continuing the language taken in the freshman year	4 or 3	4 or 3

Group Electives [see page 51] to make not less than fifteen and not more than seventeen hours weekly.

*This work may be postponed to the junior year in case it is necessary for the student to continue a subject begun in the freshman year.

JUNIOR YEAR.

	First Term.	Second Term.
Philosophy II, V	3	3
Second Foreign Language, including Spanish	4 or 3	4 or 3

Group Electives and Free Electives to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis in the first term and an oration or a thesis in the second term. See page 98.

Group Electives and Free Electives chosen from the list on pages 99-103 to make a total for the course of not less than one hundred and twenty term hours.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of B. S. Groups I, II, III, or IV, in which his work is to be done.

The head of the department in which the major work is done becomes the student's adviser. See page 111.

B. S. Group I.

1. Biology ..... 20 hrs.
2. Chemistry ..... 14 hrs.
3. Physics ..... 8 hrs.

B. S. Group II.

1. Chemistry ..... 20 hrs.
2. Biology or Physics ..... 14 hrs.
3. Biology or Mathematics or Physics ..... 8 hrs.

B. S. Group III.

1. Physics ..... 20 hrs.
2. Chemistry ..... 14 hrs.
3. Mathematics ..... 8 hrs.

B. S. Group IV.

1. Mathematics or Surveying ..... 20 hrs.
2. Physics or Mathematics ..... 14 hrs.
3. Biology or Chemistry ..... 8 hrs.

COURSE OF INSTRUCTION

BY DEPARTMENTS.

In this detailed description of the courses of instruction the number of "hours" refers to the number of hour recitations weekly. Each term is eighteen weeks in length.

All courses are offered yearly, except as especially noted.

Any elective course may be withdrawn if not chosen by at least four students.

Two hours of laboratory work are counted as equivalent to one recitation hour.

ASTRONOMY.

The courses in Astronomy aim to give the student a comprehensive view of the science and to acquaint him with the theories of the development of the solar system and the structure of the universe. In all courses the student is required to study the members of the solar system, star clusters, nebulae, and other celestial objects with the aid of the instruments in the Newton Observatory.

COURSE I—General Astronomy. A study of the members of the solar system, the laws that govern their motions, and other phenomena. Also study of the stars and nebulæ, with a discussion of the laws and theories of their relations. The important applications of astronomy to time determinaton, navigation, etc., find their places in this course. Finally the theories of cosmogony are outlined and the evidence that the heavenly bodies give in support of these theories is discussed. The student will be required to make systematic observations and to perform appropriate experiments in connection with the course. Open to students who have had a course in High

School Physics in addition to Mathematics I, or to those who have completed Physics I.

Throughout the year, three hours.

COURSE II—Field Astronomy. Determination of time, latitude, and longitude, with the transit, sextant, and chronometer. Open to those who have completed Trigonometry and Astronomy I.

Second term, two hours.

COURSE III—History of Astronomy. A course tracing the progress of the science from early times, including the work of the celebrated pioneers, down to the present day. Open to students who have completed Course I.

Second term, two hours.

COURSE IV—Spherical and Practical Astronomy. For advanced students. The theory of observation and instruments. The theory and practice of determination of time, latitude, and longitude. Eclipses and occultations. Double star observations. Positions of planets and comets with the nine-inch equatorial. Open to students who have completed Mathematics II, Physics I, and Astronomy I, and may be begun either the first or second term.

Throughout the year, four hours.

BIOLOGY.

The courses in this department are designed to acquaint the student with the great world of life in its different forms, functions, and uses. Considerable attention is given to details in observation and to a comparative study of forms, thereby training the student to observe accurately and to think clearly and logically. The economic aspects of the subject are considered with the view of presenting some of the great problems in the applied biological sciences.

A Biological Club exists for advanced students, in

which reviews of current biological literature or of research work of the student are presented.

COURSE I—General Biology. This course aims to give the fundamentals of the science, considering life in its broadest aspects as illustrated in various types; and the various laws governing form and function, and the general principles of organic evolution are considered. The first term is largely zoological in character, the second term botanical. The field work consists in the collection and identification of some group of animals or plants; in the laboratory a series of type forms is studied. Lectures and recitations two or three hours a week, laboratory and field work two and a half hours a week.

Throughout the year, four hours.

COURSE II—Principles of Biology. A course which deals with evolution, natural selection, mutation, genetics, including Mendel's Law, inheritance of acquired characters, eugenics, and the physical basis of life and heredity as found in the cell, together with the general facts and theories of development. Lectures and assigned readings. Open to all college students above freshman rank.

Throughout the year, one hour.

COURSE III—Advanced Botany. The structure and functions of the various organs of the seed plants are considered the first term, including the study of prepared material and experimental work with living plants on photosynthesis, transpiration, respiration, growth, and reactions to various stimuli. The second term's work is largely systematic and aims to acquaint the student with the local flora, including the algæ, fungi, mosses, ferns and seed plants. Field work forms an important feature of the course. Lectures and recitations one hour a week, laboratory and field work four hours a week. Open to students who have completed Course I, or its equivalent.

Throughout the year, three hours.

COURSE IV—Advanced Zoology. The external and internal morphology of a series of animals illustrating the various classes is studied. The first term is devoted to the invertebrates, the

second term to the vertebrates, including the dissection of various forms; the work of the first term is extensive, that of the second term intensive and largely comparative. Lectures and recitations two hours a week, laboratory work four hours a week. Open to students who have completed Course I, or its equivalent.

Throughout the year, four hours.

COURSE V—Economic Botany. This course is designed to give the student a knowledge of the history, distribution, methods of culture, and the uses of the various economic plants, such as those furnishing foods, fibers, flowers, drugs, timbers, etc. The cause and treatment of the diseases of the economic plants form an important feature of the work. Lectures and recitations two hours a week; laboratory work two hours a week. Open to students who have completed Course I, or its equivalent.

First term, three hours.

COURSE VI—Economic Zoology. A course corresponding to Course V, but dealing with economic animals. The major part of the time is spent in the study of insects and birds. Considerable attention is given to the identification and to the life histories of those insects which cause damage to cultivated crops. Lectures and recitations two hours a week; field and laboratory work two hours a week. Open to students who have completed Course I, or its equivalent.

Second term, three hours.

COURSE VII—Bacteriology. The aim of this course is to acquaint the student with the general distribution and activities of the micro-organisms. The laboratory work is designed to give the student training in bacteriological technique by growing and studying the morphology and physiology of some type forms. A quantitative and a qualitative analysis for micro-organisms is made of air, soil, and various food products, including water, milk, butter, etc.; the disease producing micro-organisms as well as those which cause fermentation and decay are studied. Lectures and recitations one hour a week;

laboratory work four hours a week. Open to students who have completed Course I.

Throughout the year, three hours.

COURSE VIII—Plant Physiology. A course which deals with the plant in its relation to its environment, including soil, light, heat, etc.; soil analysis, seed testing, plant breeding, and treatment of plant diseases are features of this course. This course and Courses III, V, and VI are recommended for those who anticipate teaching or studying agriculture or horticulture. Lectures and recitations one hour a week; laboratory work four hours a week. Open to students who have completed Course I.

Second term, three hours.

COURSE IX—Cytology and Histology. A course which treats of the structure of the cell and its various modifications into tissues; the laboratory work is designed to give the student training in technique and consists in the fixing, imbedding, sectioning, staining and mounting of various tissues, mostly from animals. Lectures and recitations one or two hours a week; laboratory work six hours a week. Open to students who have completed Course I, and preferably Course IV.

First term, four hours.

COURSE X—Vertebrate Embryology. This course includes the study of the development of the chick and of a mammal from the time of fertilization of the egg until fully formed. Preparation of microscopic slides and the study of the various stages constitute the laboratory work. This course and Courses IV and IX are recommended by those who anticipate the study of medicine. Lectures and recitations one or two hours a week; laboratory work six hours a week. Open to students who have completed Course IX.

Second term, four hours.

COURSE XI—Human Physiology and Hygiene. This course treats of the various functions of the human body, including digestion, assimilation, excretion, irritability, etc.; the general care of the body, including foods, exercise, diseases, and their prevention will be considered. Open to all college students.

Throughout the year, one hour.

COURSE XII—Special Biology. This course is designed for students who are desirous of pursuing some line of biological work not included in the above courses. Open to students only by permission of the head of the department.

Hours to be arranged.

CHEMISTRY.

The courses offered by this department are intended to have both a cultural and a technical value. The work has been organized as the result of an endeavor to acquaint the student with the general and special principles of the work, to familiarize the worker with accurate methods of experimentation, to develop the ability to observe critically and accurately, and make correct inferences, and finally, to provide suitable preliminary training for independent research work.

COURSE I—General Inorganic Chemistry. This course concerns itself with the fundamental principles on which the science is based. The non-metals, metalloids and metals, together with their more important compounds, are studied. Energy as a factor in chemical reactions receives special attention, as also do the elementary principles of chemical dynamics and statics. Stress is laid upon certain processes and various materials in their application to the commercial arts. Each student has a desk in the laboratory at which the required experiments are performed. More elaborate experiments to illustrate lectures are performed by the instructor. Text-books: Lee's Text-Book of Experimental Chemistry and Mellor's Modern Inorganic Chemistry. Lectures and recitations two or three hours a week. Laboratory work two to four hours a week.

Throughout the year, four hours.

COURSE II—Analytical Chemistry.—Qualitative Analysis. —Bases and Acids. The student is required to work through a system of preliminary analytical reactions. The more intimate knowledge of the elements and their compounds thus

gained enables the student to verify the methods of grouping and separating the elements. At stated intervals, lectures and recitations will be devoted to discussions of all reactions. The modern theories of "solution," "precipitation," "chemical equilibrium," etc., receive much attention. Students are required at the conclusion of the work to analyze a given number of unknown substances without reference to the manual. Text-book: Lee's Qualitative Chemical Analysis. This course includes a brief course in Spectrum Analysis. Laboratory and lectures six hours a week throughout the year. Open to those who have completed Course I, or its equivalent.

Throughout the year, three hours.

COURSE III—Analytical Chemistry.—Quantitative Analysis. The aim of this course is to provide a thorough knowledge of the principles of gravimetric and volumetric analysis as applied to the separation and determination of the common bases and acids found in salts, minerals, ores, etc. It is of special value as a training in the more refined methods of manipulation. Each student is required to calibrate a set of weights and all volumetric apparatus. The ability to make a quantitative analysis of an unknown substance is the final requirement.

Electro-Chemical Analysis.—A brief course in electrolytic methods of analysis is included in this course.

Laboratory work, eight hours per week. All laboratory work is supplemented by lectures. Open to those who have completed Course II, or its equivalent.

Throughout the year, four hours.

COURSE IV—Gas and Fuel Analysis. This course is offered because of the analyst's frequent need of this kind of training. It deals with the laws of gases, and with the various methods of determining the composition and calorific value of various gaseous, liquid and solid fuels. Lectures and laboratory work four hours a week.

Throughout the year, two hours.

COURSE V—Organic Chemistry. The work of this course begins with an historical sketch of the development of organic

chemistry, and a consideration of such topics as the nature of carbon, homology, isomerism, stero-isomerism, types of formulæ, nomenclature, and classification of organic compounds. The compounds of the aliphatic and aromatic series are then studied in detail. These compounds and processes which are of technical or theoretical importance receive special attention. This course is recommended to those students who contemplate the study of medicine or other phases of chemico-biological work, or chemical engineering. Course VI should be taken in conjunction with this course. Open to students who have completed Course II.

Throughout the year, three hours.

COURSE VI—Organic Preparations, Reactions, and Analysis. This is a laboratory course involving methods for the preparation and purification, and the analysis of a number of typical organic compounds. The physical and reaction properties, and the relationships of these compounds are then studied in detail. In the prosecution of this work the student becomes familiar with the apparatus and operations involved in the work of practical organic chemistry, such as crystallization, determination of melting and boiling points, fractional distillation, steam distillation, extraction, drying, determination of molecular weights; and with the general methods of preparation, such as etherifications, oxidation and reduction, saponification, nitration, sulphonation, diazotization, etc. The work in organic analysis includes in addition to the usual qualitative tests, quantitative determinations of carbon, hydrogen, nitrogen, and halogens. Laboratory work, six hours a week. Open to those who have completed or are taking Course V.

Throughout the year, three hours.

COURSE VII—Sanitary Analysis and Bacteriological Chemistry. The purpose of this course is to familiarize the student with the standard methods of making physical, chemical, and bacteriological examinations of air, water, milk, sewage, etc. Although attention will be given to the study of the growth and development of bacteria, and the methods of cultivating and recognizing them, stress will be placed upon the chemical changes effected by these organisms. This course is recommended to those who contemplate pursuing medicine or sani-

tary work. Opportunity is provided for practical as well as research work along this line. For example, blood, urine, and sputum are studied, with a view of emphasizing their diagnostic value; methods for testing efficiency of disinfectants are considered; etc.

Throughout the year, three hours.

COURSE VIII—Advanced Analytical Chemistry. Technical Analysis. This course offers opportunity for advanced students to study methods of analysis along special lines. It is designed to familiarize the individual with many of the analytical methods in use in commercial laboratories. Three lines of work are open to the student: (a) **Metallurgical Analysis,** which includes the analysis of those substances which are inorganic in their nature, such as iron and steel, alloys, silicates and suphides, ores, cements, coke, and coal. (b) **Food Analysis,** which includes the analysis of these substances essentially organic in nature, as foods, and the detection of adulterants. **(c) Agricultural Chemistry,** which includes analysis of soils, fertilizers, dairy products, etc.

Special courses in **Biological Chemistry** and **Toxicological Analysis** are offered to students preparing for the profession of chemistry or the study of medicine.

Hours elective.

COURSE IX—Physical Chemistry. This course aims to give the student a general knowledge of the principles of the subject by means of lectures, reading, and laboratory work. This latter work will include the determination of "the heat of neutralization," "heat of solution," "speed of reaction," solubilities, molecular weights, conductivities, refractive indices, and an experimental study of various other physical and chemical constants. Six hours per week.

Throughout the year, three hours.

COURSE X—History and Development of Chemical Theory. This course endeavors to trace the development of chemistry from its earliest origins to the present time, by a study of the lives and influence of the men who have contributed to this phase of science. Lectures, collateral readings, and prep-

aration of theses. Open to students who have completed Course I.

Throughout the year, two hours.

COURSE XI—Industrial Chemistry. The work of this course has been outlined to meet the wants of those students who are particularly interested in the application of chemical processes to the commercial arts.

Throughout the year, three hours.

ECONOMICS.

This department is open to those who have completed one year in History or Political Science.

Particular attention is given to the study of the development of economic life and institutions, American conditions being specifically analyzed. Students are made familiar with the accepted principles of the science and are given a practical acquaintance with the complex modern economic organization. Encouragement is also offered to individual research, leading to possible future specialization. Lectures, papers, and comparative examination of various authorities constitute the method of instruction.

COURSE I—Principles of Economics. Introducing a survey of industrial history, production and distribution, compassing the accepted elements of the science. The text used is Seager's Economics, and required readings are assigned in the leading modern authorities.

First term, three hours.

COURSE II—Applied Economics. This is a continuation of Course I and is a detailed examination of the economic principles applied in trusts, labor, tariff, taxation, finance, and social conditions of today. Lectures, conferences, papers, and individual investigations are the methods of instruction.

Second term, three hours.

COURSE III—Money and Banking. A survey of financial

history and thought through modern times in various nations, with an intensive study of the theories, practice and legislation of the United States. Scott's Money and Banking is the outline text of the course.

Given in 1917-18.

First term, two hours.

COURSE IV—Economic Theories. History of the development of economic thought, including a study of the leading principles of the science as propounded in Adam Smith, Ricardo, Mill, Senior, Menger, Wieser, Böhm-Bawerk, Walker, and Clark. The seminar method is used. Open to a limited number of those who have completed Courses I and II.

Second term, two hours.

Given in 1917-18.

COURSE V—Sociology. An inquiry into the underlying principles of the science of society, including a study of social control, organization, and psychology.

First term, two hours.

Given in 1916-17.

COURSE VI—Labor Organizations and Problems. This is a study of the development of trade unions, and their aims and practices. It also examines methods of industrial peace, employers' liability, and allied questions.

Second term, two hours.

Given in 1916-17.

EDUCATION.

The aim of the department is to give elementary instruction in pedagogy, with special reference to secondary education. The courses offered, together with Philosophy I, II, III, IV, and V, give the student ample opportunity to meet in full the requirements of the educational code of Pennsylvania for the Provisional Certificate.

COURSE I—History of Education. The development of educational practice and theory in the ancient, medieval, and

modern world. Special emphasis upon Greek education, the advance in education inaugurated by the Renaissance, the chief modern educational reformers, and the modern movements in education. Lectures, text-book, collateral readings, theses. Open to Juniors and Seniors.

First term, three hours.

COURSE II—Principles of Secondary Education. A brief survey of the development of secondary education in Europe and America; the traits of early and middle adolescence, with special reference to the educational needs of the student; the organization, methods, curriculum, and problems of the high school; the place and function of secondary schools in the school system and in American life; the reorganization of secondary education. Lectures, text-book, supplementary readings. Open to those who have taken Philosophy II.

Second term, three hours.

Given in 1916-17.

COURSE III—Educational Psychology. The development of the mind in childhood and adolescence. The facts and principles of the learning process, with reference to instinct, habit, attention, interest, memory, formal discipline, etc. The psychology of writing and reading. Lectures, text-books, laboratory exercises. There will be two lectures and one laboratory period of two hours each week. Open to those who have taken Philosophy II.

Second term, three hours.

Given in 1917-18.

ENGLISH BIBLE.

The work in this department is intended to open to the student the rich stores of literature contained in the Bible; to familiarize him with the history of the Hebrew people, their civilization, and their influence on the world; and to lead to the critical study of the spirit and form of Hebrew literature as it is shown in the English version. The English Bible is studied as a great monument of our literature and as the source

of our knowledge of one of the great civilizations of the world. The courses do not touch questions of doctrine or belief.

COURSE I—A General Introduction to the English Bible. The evolution of the English Bible will be traced in detail and illustrated by rare original copies of the early translations. The history of the Hebrew people, as told by their own chroniclers, will be studied, especial attention being given to the picturesque biography and the historical crises which vitally affected the development of the nation. A general survey of the different types of literature to be found in the Old and New Testaments will be given, and the messages of the prophets will be briefly considered in their historic and chronologic perspective. The student will be constantly reminded of the influence of Bible thought and phrase upon modern literature. Lectures must be taken down in carefully written note-books.

Throughout the year, one hour.

COURSE II—New Testament History and Literature. Stress will be laid on the importance of understanding the political and religious background of the New Testament life and thought. The growth of the Christian literature will be examined in outline, with constant reference to the new discoveries of contemporaneous documents, after which the life of Christ and the Epistles of St. Paul will be taken up in chronological order and studied both from the historical and literary standpoints. This will be essentially an interpretative course. Open to all who have taken Course I.

Throughout the year, three hours.

Given in 1917-18.

COURSE III—Old Testament History and Literature. The method here pursued is similar to that in the preceding course. The history of Palestine from the earliest times down to the IVth century B. C. is studied in connection with the life and development of the Hebrew people. The international connections of the Hebrews are traced, the marked eras of the nation's growth are sharply defined from the Conquest to the Exile, and the later origin of Judaism explained. The princi-

ples governing the proper interpretation of all Oriental writings are defined and applied to the early Bible narratives. The relation of the Bible to science is here examined. The literature of the Old Testament, taken up chronologically, is compared with contemporaneous writings. Particular attention is given to the origin, growth, and character of the legal literature and to the theology of the prophets.

Throughout the year, three hours.

Given in 1916-17.

COURSE IV—Biblical Archæology—New Testament. A careful examination will be made of the abundant archeological material illustrating the New Testament. Beginning with a brief sketch of modern discoveries of papyri, it will discuss the new light thrown upon the language of the New Testament and upon the ancient Greek MSS. and earliest versions, and will include a study of many Christian documents recently discovered—"Lost Gospels," libelli, prayers, hymns, sermons, letters, etc.—as well as the early funereal and other inscriptions found in Italy, Asia Minor, and Egypt. The growth and development of the early Church will be traced, beginning with the material found in the Book of Acts.

First term, three hours.

Given in 1916-17.

COURSE V—History of the Early Church. This course will briefly consider the condition of the Christian Church at the death of St. Paul and for the quarter of a century following; will study the General Epistle and the Apocalypse of St. John in the light of contemporaneous events; and will examine the social and moral life of the early Church during the next three centuries, in the light of the patristic writings and newly discovered material.

Second term, three hours.

Given in 1916-17.

COURSE VI—Bible Archeology—Old Testament. An extensive account of recent excavations in Egypt and Babylonia will be given and such new information as has been obtained concerning ancient customs and laws illustrating Bible usages. The world relations of the Hebrew people will be emphasized,

certain special important eras will be studied in detail, and the history connected with that of the surrounding nations will be presented. Contemporaneous literature will be examined and parallels with Old Testament literature noted.

First term, three hours.

To be given 1917-18.

COURSE VII—Jewish Life and Literature from the Fourth Century B. C., to the Beginning of the Christian Era. This will include a study of the influence of Persia and Greece upon Palestinian Judaism; a brief sketch of the political development, special attention being given to the war of independence under the Maccabees and its effects; a detailed examination of the rise of the Pharisees and Sadducees; a study of the Wisdom Books of the Old Testament and the non-Biblical Jewish works dating from this era, with particular reference to the Odes of Solomon and other recently discovered literature having marked influence upon the early Christian writers.

Second term, three hours.

To be given 1917-18.

ENGLISH LANGUAGE AND LITERATURE.

The aim of this department is to fit the student to use the English language as an instrument for the easy, idiomatic, and energetic expression of his thought; to train him, both by theory and by practice, for natural and effective public address; to acquaint him with the essential facts in the development of the English language and literature, and with the great authors who have created that literature; and to render him sensitive to the literary and aesthetic values of life. Rigorous and painstaking habits of scholarship are constantly inculcated; but the student is never allowed to forget that literature is vital—that it draws its subject-matter and its inspiration from life and in turn transmutes the crude and imperfect forms of life into beauty and character.

COURSE I—The Elements of Rhetoric; Themes; and Selected Readings in English Literature. This course aims to acquaint the student with the principles and the practice of the art of rhetoric, and to stimulate in him a desire for good literature. It is believed that successful instruction in rhetoric depends more upon example and practice than upon precept. With this in mind, examples of the best literature are kept constantly before the student. He is encouraged to write freely upon subjects that are familiar to him, and that spring naturally from the interests and the activities of his daily life. The instructors correct each paper in detail, and make appointments with each student for private consultation or for practice work in small groups. The instruction is made extremely flexible, and freshness and variety of method are constantly sought.

Throughout the year, three hours.

COURSE II—Introduction to English Literature. 1. An outline history of the development of English literature. 2. Collateral reading. 3. The study and interpretation in class of Shakspere's Hamlet, Milton's Minor Poems, and selections from Pope.

Elective for all students who have completed Course I, and required of all who desire to do advanced work in English.

Throughout the year, two hours.

COURSE III—English Poetry from 1789 to 1832. Copious readings from the poetry of Burns, Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats. The constant aim is to arouse in the mind of the student an intelligent enthusiasm for the great poetry of the period; and, while holding him to accurate and diligent scholarship, to show him how life and literature interpenetrate.

Elective for all students who have completed Course II.

Throughout the year, three hours.

Given in 1917-18.

COURSE IV—The Victorian Period of English Literature. Landor, Carlyle, Tennyson, Arnold, Ruskin, and Browning. Conducted in the same manner as is Course III, with which it alternates.

Elective for all students who have completed Course II.

Given in 1916-17. *Throughout the year, three hours.*

COURSE V—American Literature. Outlines of its development. Lectures upon representative authors. The critical study and interpretation of masterpieces. Appreciations and essays by members of the class.

Elective for all students who have completed Course III or Course IV.

First term, two hours.

Given in 1916-17.

COURSE VI—Essayists of the Early Nineteenth Century. Jeffrey, Hazlitt, Lamb, DeQuincey, Hunt.

Second term, two hours.

Given in 1916-17.

COURSE VII—Shakspere. Analytic and interpretative studies of five plays of Shakspere. A careful reading of Dowden's Shakspere Primer is required in connection with this course.

Elective under the same conditions as Course V.

First term, two hours.

Given in 1917-18.

COURSE VIII—Prose Fiction. Bliss Perry's A Study of Prose Fiction. Studies in the structure and the significance of the novel, the romance, and the short story. Illustrative readings and carefully prepared papers.

Elective under the same conditions as Course V, except that the class must be kept within small limits, and that advanced students who have shown special talent as writers will be given preference.

Second term, two hours.

Given in 1917-18.

COURSE IX—Anglo-Saxon. Bright's Anglo-Saxon Reader, with appropriate readings in reference books on the English language. This course aims not only to give a reading knowledge of Anglo-Saxon, but also to show the development of Anglo-Saxon into Modern English. Students intending to teach English are especially advised to enter this course.

Elective for all students above freshman rank who plan to do major or minor work in English.

Given in 1916-17. *First term, three hours.*

COURSE X—Old and Middle English Poetry, not including Chaucer. The course includes such Old English poetry as Beowulf, The Wanderer, The Seafarer, and The Battle of Brunanburh; and typical Middle English histories, legends, romances, tales, and lyrics. No special training in Anglo-Saxon or Middle English is necessary.

Elective under the same conditions as Course IX.

Second term, three hours.

Given in 1916-17.

COURSE XI—The History of the English Language. Consideration is given to such problems as the origin of language, the relationship of English to other languages, vocabulary, inflections, and syntax.

Elective under the same conditions as Course IX.

First term, three hours.

Given in 1917-18.

COURSE XII—Chaucer. This course considers the literary aspects of Chaucer's poetry. The life of the poet and the historical and the literary background of the period are studied. Many of the Canterbury Tales are read, and as much more of Chaucer's other poetry is included as time allows.

Elective under the same conditions as Course IX.

Second term, three hours.

Given in 1917-18.

FRENCH LANGUAGE AND LITERATURE.

It is the aim of the courses in this subject to give to the student: (1) an accurate knowledge of the language of the present time both as written and spoken; (2) an appreciation of the more important masterpieces of the literature proportionate to the knowledge of the language; and (3) a knowledge of the historical development of the literature.

The work as above outlined is carried on by means of recitations, the writing of prose and essays, the

hearing of lectures in French, and by collateral readings. Much stress is laid from the beginning upon the ability of the student to express himself directly in the language. With this end in view the work of the class room is conducted in French, and phonetic methods are employed in order to give accuracy of pronunciation.

COURSE I—Elementary French. Fraser and Squair's Grammar is used as a reference book. Oral and written exercises. Dictation. Reading of easy prose.

Throughout the year, four hours.

COURSE II—Intermediate French. Reading of such authors as George Sand, Mérimée, Daudet, Augier, Dumas, etc. Memorizing of selected poems. In this course brief outlines of the history of literature are also given with collateral readings from celebrated authors.

Throughout the year, four hours.

COURSE III—French Literature in the Seventeenth Century. A study of the drama and of the miscellaneous literature of the period. Corneille, Racine, Molière, La Fontaine, La Bruyère, Pascal, Bossuet, Fenelon, Mme. de Sévigné, Mme. de La Fayette.

Throughout the year, three hours.

Given in 1917-18.

COURSE IV—French Literature in the Eighteenth Century. This course will treat of the time and influence of Voltaire, Montesquieu, Rousseau, the Encyclopedists, Beaumarchais, Lesage, Marivaux, André Chénier.

Throughout the year, three hours.

Given in 1916-17.

COURSE V—French Literature in the First Half of the Nineteenth Century. A study of the principal authors of this period: Chateaubriand, Lamartine, Victor Hugo, Alfred de Vigny, Alfred de Musset, Théophile Gautier, Sainte-Beuve, Balzac.

Throughout the year, three hours.

Given in 1916-17.

COURSE VI—French Literature after 1850. A study of the literary movements in France after the decline of Romanticism, with especial reference to the novelists and dramatists. Outside reading will be demanded in addition to rapid reading from a number of the authors of this period. A brief survey will be made of contemporary writers, including Rostand and Maeterlinck.

Throughout the year, three hours.

Given in 1917-18.

COURSE VII—French Prose Composition.

Throughout the year, one hour.

GEOLOGY.

Including Geography, Mineralogy, and Paleontology.

Geology deals with the constitution and history of the earth and the character, history and relationships of the developing life upon it. It explains many of the natural phenomena at hand, or that one meets in travel, and calls forth careful observation and clear thinking. The courses are planned to give thorough training in the principles of the subject and a sound basis for future industrial, economic, or professional work in its various departments.

COURSE I—General and Economic Geology. The first term of this course includes physiographic, structural, dynamic, and historical geology; and the second term economic geology. The historical part deals largely with North America. The economic part treats of coal, oil, gas, building stones, clay, cements, abrasives, underground waters, precious stones, and the ores of iron, copper, lead, zinc, gold, and silver. In the laboratory a study is made of rocks and common minerals, topographic and geologic maps and folios, and a few typical fossils. Recitations three hours a week; laboratory and field work two hours a week. Open to those who have had a year in Chemistry.

Throughout the year, four hours.

COURSE II—Advanced Physiography. This course deals with the physiography of the lands and the oceans and with the atmosphere, especially in its relations to climate and weather conditions. Stress is laid on the method of development of topographic forms, and training is offered in field and laboratory methods in physical geography. In the laboratory and field, types of land forms, and the methods of making maps, and structural, longitudinal, and cross sections are studied. Recitations two hours a week; laboratory or field work two hours a week.

First term, three hours.

COURSE III—Commercial and Regional Geography. In this course a study is made of the geographic basis of commerce and commercial products, and stress is laid on the regional phase of the subject. A more detailed study of conditions in United States is made the basis for comparison with conditions in other countries. There are many large manufacturing plants and shipping concerns in this region, some of which may be visited. Recitations three hours a week.

Second term, three hours.

COURSE IV—Mineralogy. Crystallography, blowpipe analysis, and determinative mineralogy. A minor part of the work in the laboratory deals with crystal forms and crystal models, and a major part with the study of about one hundred and fifty minerals by means of the blowpipe and other physical and chemical tests. Recitations one hour a week; laboratory four hours a week. Open to students who have completed a year in Chemistry.

First term, three hours.

COURSE V—Paleontology. This course includes the study of invertebrate and vertebrate animal and plant fossils with reference to structure, classification, habitat, and geologic and geographic distribution. The permanency of certain types, the extinction of some groups, and the rise of new forms are noted with the bearing on the theory of evolution. Representatives of the various groups are studied in the laboratory and field. Recitations two hours a week; laboratory and field

work two hours a week. Open to students who have completed Course I and Biology I, or their equivalents.

Second term, three hours.

GERMAN LANGUAGE AND LITERATURE.

The methods employed in the first two years of this study are intended to establish a broad and thorough foundation for an appreciative study of German literature in the advanced courses. Accuracy and intelligent pronunciation are insisted upon; and the principles of phonetics are represented in simple form and are put to practical use in the reading exercises in the class room. In prose composition more attention is given to reproductive exercises and theme-writing than to translations. The oral use of the German language in the class room will be constantly increased until the recitations are conducted entirely in German.

A German Conversation Club, in which a special opportunity for linguistic practice is afforded, has been founded among the students of the college. Membership is open to those who have taken Course II, or its equivalent.

COURSE I—Elementary German. Walter & Krause's Beginning German. Such reading as the following: Storm's Immensee, Baumbach's Im Zwielicht, Heyse's L'Arrabbiata, Goebel's Hermann der Cherusker, Wildenbruch's Neid, Schiller's Wilhelm Tell. Oral exercises based on the Gouin Series and oral and written reproduction of portions of the text read. The aim of this course is to enable the student to read and understand accurately German prose of ordinary difficulty and to acquire some proficiency in writing and speaking German.

This course represents from five to six terms of ordinary

high school work, but may not be taken to remove language requirements for admission to college.

Throughout the year, four hours.

COURSE II—Intermediate German. Reading of modern prose, modern comedy, and classical drama. One hour a week throughout the year will be devoted to prose composition, reproduction of texts in German, and short themes in German.

Open to all students who have credit for German I, or who present two years of German for admission to college.

Throughout the year, four hours.

COURSE III—Introduction to Eighteenth Century Classics. Lessing, Goethe, and Schiller. Two dramas of each are read in the order named and at least one work of each is critically analyzed. Monthly themes in German and a semestral essay in English. Collateral reading: Robertson's History of German Literature, chapters on the above poets. Alternates with Course IV.

Throughout the year, three hours.

Given in 1916-17.

COURSE IV—German Novel and Short Story. Rapid reading of one or more works of H. von Kleist, Eichendorf, Hauff, Hoffman, Stifter, Ludwig, Freytag, C. F. Meyer, Keller, Storm, Heyse, Fontane, Wildenbruch, Sudermann, and Rosseger. A part of this reading is done outside the class and is made part of written themes in German. Collateral reading: Robertson's History of German Literature, chapters on the authors read in class. Alternates with Course III.

Throughout the year, three hours.

Given in 1917-18.

COURSE V—German Conversation and Composition. The aim of this course is to train the student in colloquial German in speech and writing. Selections from modern authors are read to the class and reproduced from memory, and themes are written weekly on assigned subjects. The conversation is based on Kron's Daily Life and Vos' Materials for German Conversation. Given in conjunction with Course III. This course,

conducted in German, is especially intended for those who look forward to the teaching of German.

Throughout the year, one hour.

COURSE VI—Goethe's Life and Work. First Term. Reading of works illustrating different periods of Goethe's literary development, such as Götz von Berlichingen, Egmont, Torquato Tasso, and selections from Dichtung and Wahrheit. Collateral reading from Bielschowsky's Goethe.

Second Term. Goethe's Faust. Interpretation of the drama and discussion of its philosophic and ethical ideas.

In this course a considerable amount of collateral reading will be required. Alternates with Course VII.

Throughout the year, three hours.

Given in 1916-17.

COURSE VII—Nineteenth Century Drama. Kleist, Grillparzer, Hebbel, Ludwig, Gutzkow, Wagner, Hauptmann, Sudermann. Rapid reading of representative play of each. Short themes in German on the reading matter. Collateral reading: Robertson's History of German Literature, chapters on the authors read in class. Alternates with Course VI.

Throughout the year, three hours.

Given in 1917-18.

COURSE VIII—German Literature. A systematic study of German literature from the earliest times, with special emphasis on the Classic Periods of the Twelfth and Eighteenth Centuries. Lectures in German, reports, and readings. Collateral reading: Thomas' Anthology of German Literature, Wenckebach's Meisterwerke des Mittelalters, Woerner's Niebelungenlied, Schiller's Braut von Messina and Don Carlos, and Goethe's Faust. Alternates with Courses IX and X.

Throughout the year, two hours.

Given in 1917-18.

COURSE IX—History of the German Language, and Advanced Prose Composition. A general survey of the historical development of the German language, with discussions of such linguistic problems as bear relation to current usage. Text-book: Behagel's Die Deutsche Sprache. Recitations and

lectures. This course is especially intended for those preparing to teach German.

First term, two hours.

Given in 1916-17.

COURSE X—Middle High German. Study of the dialect in its relation to modern High German, and readings from Hartmann von Aue's Der arme Heinrich, Das Niebelungenlied, and Walter von der Vogelweide's lyrics.

Second term, two hours.

Given in 1916-17.

COURSE XI—Scientific German. This course has been specially arranged for the student of science who is interested mainly in a reading knowledge of German. Open to students who have completed Course II.

Throughout the year, three hours.

GREEK LANGUAGE AND LITERATURE.

The aim of the department is to give the student a practical acquaintance with Greek life and thought. This can be adequately gained only through a first-hand knowledge of the literature. By accurate work in the first years of the study of the language the student can acquire the ability to read widely and independently.

It is realized that some students have been denied the opportunity to secure a mastery of the language who would be glad to have something of the inspiration that comes from contact with Greek culture and institutions. For such the courses in Greek art and in Greek literature in translation are available.

The department possesses a carefully selected collection of casts of antique sculpture, a considerable number of Greek vases and vase fragments, about a thousand photographs and several hundred lantern slides.

Students entering college without Greek may take Greek A, and be prepared to enter the later courses with a minimum loss of time.

GREEK A—Elementary Greek. This is a course intended to prepare students to enter Greek I, after a year of careful work. After the completion of some such book as Benner and Smyth's First Greek Book, selections are read from Xenophon and other Attic authors. Students of some maturity and reasonably well grounded in Latin will be prepared in one year to do the work in Greek I with profit.

Only in exceptional cases will this course, without further work in the subject, be counted for a degree.

Throughout the year, five hours.

COURSE I—Homer. The Iliad or the Odyssey. Detailed study of two books and rapid reading of as much more as the time allows. This rapid reading of the Homeric poems as literature is made the basis of the study of early Greek life and civilization.

Greek Composition.—A weekly exercise in composition based on passages from classic authors. The aim is to develop a vocabulary and an accurate knowledge of the fundamentals of Greek syntax. Dictation and impromptu writing of Greek are emphasized.

Throughout the year, four hours.

COURSE II—Lysias. Selected Orations. As an introduction to this part of the work a detailed study is made of the history of Athens in the Periclean age and of the Peloponnesian War.

Plato—The Apology and Crito and selections from the Phaedo. Outline of the history of Greek philosophy.

This course is made the basis of the study of historical Greek life and institutions.

Throughout the year, three hours.

COURSE III—Greek Drama. Detailed study of two plays and rapid reading of several others. Usually the following will be read: Aeschylus' Agamemmon, Sophocles' Oedipus

Tyrannus, Euripides' Iphigeneia in Tauris, and Aristophanes' The Frogs. The course is made not only a study of the origin and development of the Greek Drama, but also a study in literary evolution.

Throughout the year, three hours.

COURSE IV.—Greek Oratory. Andocides, Isocrates, Demosthenes. The history and politics and the public and private antiquities of the times. Lectures and assigned readings.

Throughout the year, three hours.

Courses III and IV are offered in alternate years. In 1916-17 III will be given. Open to all who have completed Course II.

COURSE V—Greek Testament. A close study of a portion of the New Testament, usually the Gospel of Mark. Familiar and accurate knowledge of vocabulary, syntax, and idioms is aimed at. Acts and some of the shorter Epistles are read more rapidly to develop facility in grasping the thought of the original. Much stress is laid on sight reading and on accurate but untraditional translation. The purpose of the course is to lay the foundation for exegetical work. Open to all who have completed Course II.

Throughout the year, two hours.

Given in 1917-18.

COURSE VI—Greek Literature. A survey of the field from Homer to the Roman period. One hour a week is devoted to lectures and text-book work, one hour is given to critical readings in English translations, and two hours to readings in Greek. Open to all who have completed Course II.

Throughout the year, four hours.

The following courses are open to students that have completed Course I and to a limited number of Junior and Seniors who have no knowledge of Greek.

Greek VII—Greek Literature in English. The course consists of the lectures, text-book work, and English readings of Course VI. Much attention is given to the development of literary forms. The growth of the Greek drama and its influence on modern drama are closely studied.

Throughout the year, two hours.

COURSE VIII—Classical Archeology. Egyptian, Babylonian, and Assyrian Art. Mycenaean Civilization. Greek Vase Painting. Greek Architecture.

Throughout the year, two hours.

COURSE IX—Classical Archeology. Greek Sculpture.

Throughout the year, two hours.

Courses VIII and IX are given in alternate years. The instruction is mainly by lectures, but text-books are used and a large amount of collateral reading is required.

HISTORY.

The aim of the department is to give that knowledge of the facts and philosophy of history which belongs to a liberal education. The subjects in periods and countries are planned also to train for university work or to equip for preparation to enter law or journalism. The evolution of European civilization from its sources and the growth and influence of Anglo-Saxon institutions are the general theme of the work. History is presented as a real educative process. The department has the appropriate library authorities for the several courses, and source materials are freely used. Abstracts, maps, essays, and outlines are required in the class room. The method of instruction is a combination of lectures and text-book. Course I is required for admission to the succeeding courses.

COURSE I—European History. The period covered extends from the Teutonic migration to the French Revolution. The first term is given to medieval institutions and the transition to modern Europe. Thatcher and Schwill is the text for class guidance, with Robinson's European Readings and assignments in standard authorities. The second term is occupied with the growth of nationalities and the religions and political struggles for balance of power. The Oxford series of Periods of History

are the texts. One hour of lecture each week, with two hours of quiz and reports.

Throughout the year, three hours.

COURSE II—The Renaissance and the Reformation. The first term is devoted mainly to the Renaissance in Italy and subordinately in England. The political, intellectual, literary, and aesthetic phases of the movement are studied. Burckhardt and Symonds are the authorities used, with Einstein for the English Renaissance. The second term is occupied with the Reformation from Wycliffe to the Peace of Westphalia. The texts are Hausser and Fisher.

This course alternates with Course III.

Throughout the year, three hours.

Given in 1916-17.

COURSE III—French Revolution and Nineteenth Century. A lecture course with reference study in several authorities. The first term examines the causes and the progress of the Revolution and concludes with the Napoleonic Era. The second term covers Europe after the Congress of Vienna, tracing the formation of the German and Italian unity and the continental triumph of liberalism. Hazen's Europe is used as an outline of the work.

Throughout the year, three hours.

Given in 1917-18.

COURSE IV—History of England. The work extends from the Teutonic origins to the Nineteenth Century. Lectures, collateral readings, and text-books. Gardiner's Student's History and Green's Short History of the English People furnish the outline; and references are required in the constitutional histories of Stubbs, Maitland, and Taswell-Langmead and in the works of Froude, Gardiner, and Lecky. This course alternates with Course V.

Throughout the year, two hours.

Given in 1916-17.

COURSE V.—The Political and Constitutional History of the United States, from 1781 to 1877. The sources are extensively used as found in the government publications, the writings and

addresses of statesmen, and the contemporary interpretation of national affairs. Lectures, and reports by students on assigned readings in Schouler, Henry Adams, McMaster, Gordy, Rhodes and the American Nation Series. Monographs required of the class each term.

Throughout the year, two hours.

Given in 1917-18.

ITALIAN LANGUAGE AND LITERATURE.

COURSE I—Elementary Italian. Italian Grammar, Grandgent. Oral and written exercises. Dictation. Texts such as De Amicis, Cuore; Goldoni, Il vero Amico; Manzoni, I Promessi Sposi.

Throughout the year, three hours.

Given in 1916-17.

COURSE II—Literature in the Thirteenth and Fourteenth Centuries. Dante, La Divina Commedia; Patrarca, Rime Scelte, etc.

Throughout the year, two hours.

Given in 1917-18.

LATIN LANGUAGE AND LITERATURE.

The courses in the Latin department are intended to direct the student to a systematic study of the language and its development, to acquaint him through a varied reading of the best authors with the leading features of the literature, and to make him familiar with the main facts of Roman history, life, and civilization. Technical grammar and composition are studied only in so far as they contribute to the comprehension of the language. The department is well equipped with books, maps, and fac-similes of inscriptions and has a good collection of photographs, lantern slides, and antiquities for illustrative purposes.

The instruction is given by means of recitations,

supplemented by lectures and, in the advanced courses, by individual work.

COURSE I—Cicero, De Senectute or De Amicitia. Selections from **Livy, Sallust** and **Cicero's** Letters covering in outline the history of the Republic. Weekly exercises in Prose Composition.

This course includes a detailed review of Latin case structure and syntax, and a specific effort is made to teach right habits of reading and translation.

Throughout the year, four hours.

COURSE II—Horace, selected Odes and Satires.

The more common metrical structures are studied so that the Latin can be read with ease. Especial attention is directed to Horace's life and philosophy, and to as much of the history and customs of the period as sheds light on the subject matter.

Readings from Latin Verse of all periods. History of Latin Literature.

Throughout the year, three hours.

COURSE III A—Roman History. A brief introductory course of lectures on the history of Rome from the beginning to the Civil War period. Extensive readings in English, covering the same period. The Civil War and the Early Empire will be studied more intensively in connection with readings in Latin from Cicero's Letters and Tacitus' Annals. Reports and assigned readings in Mommsen, Heitland, Ferrero, Merivale, and the standard biographies.

Throughout the year, three hours.

B—Martial, selected Epigrams. General study of Roman Satire with comparative readings from other satirists. Collateral reading in the history of the period.

Quintilian, Institutions X. Lectures and discussions on Roman literary forms, and on Roman education.

Throughout the year, three hours.

One of these courses alternates with Course IV. Open to all who have completed or are taking Course II.

Given in 1917-18.

COURSE IV—Roman Private Life. Lectures on Roman Private Life with collateral readings in Latin, largely from Pliny's Letters, illustrating the subjects treated. In addition to the Latin readings, library readings and reports on specific subjects in connection with the course are required. The department has a collection of antiquities, charts, and models for illustrative purposes.

This course alternates with Course III. Open to all who have completed or are taking Course II.

Throughout the year, two hours.

Given in 1916-17.

COURSE V—Roman Topography. A lecture course which does not limit the field strictly to the topography of Rome, but attempts to give a general knowledge and appreciation of the City of Rome, its architecture, monuments, history, and customs, as well as its contribution to modern civilization and life. The department has a good collection of illustrative material—maps, topographical models, charts, photographs, and lantern slides. The library contains most of the important books in English needed for the course, in which students are required to do considerable collateral reading.

May be elected without previous preparation in Latin.

Throughout the year, two hours.

Given in 1917-18.

COURSE VI—Advanced Latin Composition. Practice in writing prose, with careful study of syntax and idiom. Individual work designed primarily for those who look forward to teaching or to graduate work. One hour class work and one private conference weekly.

All students expecting recommendations to teach Latin should take this course.

Throughout the year, two hours.

Given in 1916-17.

NOTE.—For students entering college without complete preparation in Latin, instruction will be provided in such secondary Latin as may be required to satisfy entrance conditions.

MATHEMATICS.

The courses in this department are arranged with a view to develop in the student a certain degree of mathematical maturity and to familiarize him with the subject matter and methods of mathematical work, as well as to provide for the more or less technical and traditional requirements in the different mathematical subjects.

COURSE I—Algebra and Trigonometry. This is a continuation of the algebra required for entrance. Much attention is given to graphical representation of linear and quadratic equations, and the following topics are considered: mathematical induction and the binomial theorem for positive integral exponents, logarithms, undetermined coefficients, permutations and combinations, the theory of equations and an elementary treatment of determinants. The elements of trigonometry on the plane and on the sphere.

Throughout the year, four hours.

COURSE I A—Solid Geometry, Algebra and Plane Trigonometry. This course is offered to those who do not present solid geometry for entrance but who desire to continue their mathematical studies. It includes work in what might be termed intermediate algebra, rapidly reviewing quadratic equations and adding some new chapters. The course concludes with a study of plane trigonometry.

By arranging in advance with the instructor and the registrar, this course may be discontinued at the close of the section on solid geometry.

Throughout the year, four hours.

COURSE II—Analytic Geometry and Calculus. An elementary treatment of the fundamentals of analytic geometry, of two and three dimensions. This course includes a complete elementary course in differential and integral calculus.

Throughout the year, four hours.

COURSE II A—Selected Chapters in Mathematics. This course requires Course I or Course I A, and is composed of an introductory chapter on elimination, including the use of determinants; the study of the algebraic polynomial, by means of graphical representation; the analytic geometry of the line and the more important theorems of equations; the definition of a derivative; simple applications of the calculus to problems involving tangents, maxima and minima; and the study of elementary transcendental functions.

This course is especially adapted to those who are expecting to teach secondary mathematics.

Throughout the year, three hours.

COURSE III—Advanced Calculus. This course is a continuation of Course II. It should be taken by those who intend to pursue advanced work or are looking forward to work in applied mathematics. This course presupposes Course II or Course II A.

First term, three hours.

COURSE IV—Differential Equations. An elementary treatment of differential equations, with applications to physics and mechanics. This course is necessary to a well-rounded course in mathematics.

Second term, three hours.

COURSE V—Projective Geometry. Lectures, supplemented by reading. Reference books: Reye, Geometrie der Lage; Scott, Modern Geometry; Cremona, Projective Geometry.

Higher Plane Curves. The general properties of curves, the resolution of singularities, and forms of curves of the third and fourth orders.

Throughout the year, three hours.

Given in 1917-18.

COURSE VI—Functions of a Complex Variable. A general introduction to the theory of functions of a complex variable, following the methods of Weierstrass and Riemann.

Throughout the year, two hours.

Given in 1916-17.

PHILOSOPHY.

The courses of the department are planned with the following purpose: to bring about reflective views of human society and the world order; to establish an attitude toward life and its problems that will make the individual an efficient factor in promoting and conserving the welfare of his fellowmen; to lead the student to a better understanding of the laws of human nature, and to a critical study of himself; and to acquaint those desiring it with laboratory methods in psychology. The standpoint is in strict accord with the assured results of scientific research. Facts are brought together from the various fields of science, and presented in such a way as to produce breadth of vision in the interpretation of natural and social phenomena.

COURSE I—Logic. The nature and function of thought; the methods of science; errors of perception, memory, and testimony; immediate and mediate reasoning; material and formal fallacies; the logic of argumentation. Text-book, assigned readings, lectures, and written exercises. Open to Juniors and Seniors.

Second term, three hours.

COURSE II—General Psychology. The structure and the functions of consciousness are exhibited by means of lectures, class-room demonstrations, and recitations. The subject is treated from the standpoint of natural science. Each student is required to perform a limited number of experiments. Open to Juniors, and to Sophomores who major in the department.

First term, three hours.

COURSE III—Experimental Psychology. An introductory course for students who desire to become acquainted with the methods of investigating psychological phenomena. Experiments in the psychology of the special senses, attention, mem-

ory, feeling, fatigue, reaction-time, etc. Lectures, laboratory work, and supplementary readings. Two hours of laboratory work for one hour of credit. Open to those who have taken or are taking Course II.

Throughout the year, two hours.

COURSE IV—Social Psychology. An examination of the social implications of mental development in the individual and the race. The influence of the social environment upon the development and the organization of native tendencies; the rise of self-consciousness; the evolution of the social consciousness through the application of moral judgment. The psychology of the crowd, of fashion, and of custom. Lectures, text-book, collateral readings. Open to those who have taken Course II.

First term, two hours.

Given in 1916-17.

COURSE V—Ethics. An introductory study of the moral life from the standpoint of its development, theory, and practice. An attempt to lay a rational basis for the moral life in the individual. Lectures, text-books, written exercises, and supplementary readings. Open to those who have taken Course II.

Second term, three hours.

COURSE VI—History of Ancient and Medieval Philosophy. A survey of the development of philosophic thought from Thales to the Renaissance, considered in its relation to the sciences and to religious, social, and political conditions. Special attention is given to Democritus, the Sophists, Plato, and Aristotle, and their influence upon subsequent thought. Open to Juniors and Seniors.

First term, two hours.

Given in 1917-18.

COURSE VII—History of Modern Philosophy. The growth of philosophic thought from the time of Bacon and Descartes. The relations are exhibited which philosophy has sustained to the development of modern civilization. Lectures, text-book, and assigned readings. Open to Juniors and Seniors.

Second term, two hours.

Given in 1917-18.

COURSE VIII—Current Philosophical Tendencies. A course designed to acquaint the student with contemporary tendencies in philosophical thought. The standpoints of outstanding present-day philosophers in Europe and America will be discussed. Lectures, collateral readings, and theses. Open to Seniors, and to Juniors who have had two courses in philosophy.

Second term, two hours.

Given in 1916-17.

COURSE IX—Philosophy of Religion. The origin and nature of religion; the relation of the philosophy to the history of religion; the trustworthiness of the religious consciousness; the universal element in all religions; the philosophy of primitive beliefs and practices, such as fetichism, magic, and sacrifice; the characteristics which distinguish tribal, national, and universal religions; the causes of variation in religion; the reason why so few religions have been missionary; the relation of religion to secular life, to science and art, to morals and theology; the ultimate value of religion; the religion of the future. Lectures, text-books, theses. Open to those who have taken Courses II and V, and Bible I.

First term, two hours.

Given in 1917-18.

COURSE X—Theism. The true basis of knowledge is inquired into, the traditional arguments for the existence of God are critically examined, and the attempt is made to show that the theistic conception of the world is a necessary postulate of reason and of human life as a whole. Open to all who have taken Courses II and V, and Bible I.

Second term, two hours.

Given in 1917-18.

COURSE XI—History of Religion. This course will treat of the earlier forms of religious worship, and the origin of the great historic cults. It will give special attention to the tenets of the ethnic religions at the epoch of their highest development, and will trace sympathetically the essential influences of these religions upon national and social life, and especially upon morals and personal religious experience. The relation of Christianity to the cycle of ancient historical religions will be

considered. Lectures, text-book, and theses. Open to those who have taken Courses II and V, and Bible I.

First term, two hours.

Given in 1916-17.

COURSE XII—Philosophic Basis of Christian Fundamentals. After a brief consideration of the nature and value of religion in general, this course will take up the importance of environment upon Christian origins, and the relation of Christianity to the contemporaneous Jewish and Gentile religions, noting essential agreements and differences. This will be followed by an attempt to define the true nature and essence of Christianity, and to state briefly the philosophy of such distinctive Christian doctrines as the incarnation, atonement, miracles, Christian faith, conversion, etc. Christian ideals will be examined in the light of present-day problems of civilization and culture; the question will be raised whether the supremacy and ethical transcendence of Christ do not represent the ultimate ideal of religion, and insure the finality of Christianity. Open to those who have taken Courses II and V, and Bible I.

Second term, two hours.

Given in 1916-17.

PHYSICS.

This department offers courses which contribute to general culture, and those which give training for technical work. They are presented by means of lectures with experimental demonstrations, combined with recitations and discussion of problems. In addition the student performs experiments in the laboratory for the purpose of obtaining a practical knowledge of the fundamental laws and principles of the science.

COURSE I—College Physics. This course aims to present the fundamental principles of physics, develop its laws and acquaint the student with the relation between energy and matter. These principles and laws are presented in the study of mechanics; and their applications to heat, sound, light, and

magnetism and electricity follow. Lectures and recitations three hours a week. Laboratory work two hours.

Throughout the year, four hours.

COURSE II—A Problem Course to supplement Course I. Open only to students who are pursuing Course I.

Throughout the year, one hour.

COURSE III—Elementary Analytic Mechanics. A course which deals with the mathematical side of physics. Special attention is given to the solution of problems in statics, kinematics, and kinetics, and other problems related to technical as well as advanced work in physics. Physics I and Mathematics II are prerequisites.

Throughout the year, two hours.

COURSE IV—Physical Measurements. A lecture and laboratory course involving the adjustment and use of instruments of precision. The significance and accuracy of results, together with the sources of errors and means of their elimination are carefully discussed. Open to students who have completed Course I.

Throughout the year, three hours.

COURSE V—General Physics. A course in theoretical physics dealing principally with mechanics, heat, the properties of vapors and gases, the theory of solutions, the kinetic theory of gases, thermo-dynamics, magnetism and electricity. Lectures, experimental demonstrations and recitations, two hours a week. Laboratory work four hours a week. Open to students who have completed Course I and Mathematics II.

Throughout the year, four hours.

COURSE VI—History of Physics. Open as a free elective to students who have completed Course I.

Throughout the year, two hours.

COURSE VII—Electrical Measurements. Lectures and recitations, supplemented by laboratory work in the theory of measurements designed to acquaint the student with the practical methods of measuring electrical quantities. Includes the standard methods of determining resistance, current, E. M. F.

capacity, induction, conductivity, etc. One hour lecture and recitation; four hours laboratory. Open to those who have completed Physics I and Mathematics I.

First term, three hours.

COURSE VIII—Direct and Alternating Currents. A study of the production, control, and distribution of the electric current. Special attention is given to the dynamo and motor, not in the sense of an engineering problem of construction, but in their relation to the utilization of electrical energy. The course includes the principles and practice of transformation and conversion of alternating currents. One hour lectures and recitation, four hours laboratory work. Open to students who have completed Physics VII.

Second term, three hours.

OTHER COURSES. For students desiring to specialize in physics, courses dealing with any of the subjects treated under this department will be given as the work is demanded.

POLITICAL SCIENCE.

The sequence of courses in this field is planned so that emphasis is laid upon the functions of national, state, and local governments in the United States, with the two-fold purpose of preparing men and women for the duties of citizenship, and of familiarizing students with a concrete example of government as a foundation for the more advanced theoretical work in the nature and functions of the state in general. Three courses are devoted to government and modern political problems, while the fourth is devoted to political philosophy.

COURSE I—American Government. This course is divided between a study of the structure and functions of our national and state governments. Throughout the course present-day political problems of national and local interest will be made the subject of discussion in class. Beard's American Govern-

ment and Politics and Bryce's American Commonwealth furnish an outline of the work.

First term, three hours.

COURSE II—Municipal Government. This course includes an outline of the growth of American municipalities and a study of the organs and functional mechanism of modern cities in the United States and European countries. Emphasis is laid upon the newer tendencies in the progress of municipal government. Munro's The Government of American Cities and The Government of European Cities furnish a basis for the work.

Second term, three hours.

COURSE III—Comparative Government. A study is made of the constitutional structure and organization of the more important governments of Europe. The object is to enable the student to compare these governments with each other and with our own. The course is open only to those who have completed Political Science I and II and History I. Ogg's The Governments of Europe is the text.

First term, two hours.

COURSE IV—Principles of Political Science. This course comprehends a study of the origin, nature, and functions of the state and a critical examination of ancient, medieval, and modern political theories. The requirements for admission into this course are the same as for Course III.

Second term, two hours.

PUBLIC SPEAKING.

The courses in public speaking are designed to train the student in the composition and the delivery of the various forms of public address. So far as possible, the work is adjusted to the particular needs of the individual student.

COURSE I—Written analysis and interpretation of extracts from great orations. Extemporaneous speaking. This course aims to develop directness, earnestness, and dignity in public address. During the first term a careful study is made of the

psychological principles which govern effective speaking. Sample speeches are studied and assigned passages are delivered by each student. During the second term the same work is continued but more extemporaneous work is required.

Elective for all who are taking or have completed English I.

Throughout the year, one hour.

COURSE II—Argumentation and Debate. First term. In this term the emphasis is laid upon theory. The principles of analysis, the rules of evidence, the elements of logic, and the kinds of fallacies are discussed. There is also brief-drawing leading up to written and oral debate. Second term. The theory of the subject is concluded; the emphasis, however, is laid upon practice.

Elective for all who have completed Course I.

Throughout the year, one hour.

COURSE III—The Oration. First term. An examination of the principles of the oration as presented in some such book as Shurter's The Rhetoric of Oratory. Collateral readings are assigned. Second term. A number of selected orations will be tested in the light of the principles studied during the first term. Each student will write a brief eulogy and will be given oral practice in the delivery of several of the forms of speeches.

Elective for all who have completed Course I.

Throughout the year, one hour.

COURSE IV—Practical platform work in the delivery of the colloquial, elevated, and impassioned styles of oratory. Lectures on the philosophy of expression with accompanying studies to be worked out by the pupil in platform presentation. A systematic study of voice culture is begun in this course. The "Natural Tone Drill" is the system used. A study of the principles underlying gesture work is also required.

Elective for all who have completed Course I.

First term, two hours.

COURSE V—The study of voice culture is continued in this course in a more advanced and technical way. Dramatic readings from Shakspere and interpretative studies of the master-

pieces of literature will be given each student. Some extemporaneous platform work will also be required.

Elective for all who have completed Course IV.

Second term, two hours.

SPECIAL WORK for the individual pupil will be given in private lessons. A fee of ten dollars for each term hour will be charged.

SPANISH LANGUAGE AND LITERATURE.

COURSE I—Elementary Spanish. Olmsted and Gordon's Spanish Grammar. Reading of such easy Spanish as Alarcon, El Capitán Veneno; Galdós, Dona Perfecta.

Throughout the year, three hours.

COURSE II—A study of modern Spanish novels and dramas.

Throughout the year, two hours.

SURVEYING AND GRAPHICS.

The courses in surveying and graphics are based largely on the needs of the civil engineer and draughtsman. The work is scientific and yet thoroughly practical in its scope and methods. While these courses are provided for students taking B. S. Group IV, they are open as electives to all students.

COURSE I—Descriptive Geometry. The problems are those relating to the point, line, and plane, the representation of surfaces, their intersection and development. This course includes instruction in the use and care of instruments, sketching, and isometric and cabinet projections.

Throughout the year, three hours.

COURSE II—Plane Surveying. This course consists in a series of lectures, supplemented by exercises in the field. The student is taught the use of the chain, tape, compass, transit and level. The work in the drawing room consists in the com-

putations incident to the work of the surveyor and in plotting from notes taken in the field.

First term, three hours.

COURSE III—Railway Surveying. This course consists of a study of railway curves and earthworks. The field work includes a reconnaissance, the preliminary and location surveys, and the necessary computations and maps.

Second term, three hours.

COURSE IV—Mechanical Drawing. This course includes plotting, tracing, the making of blue prints, detail and dimension drawing from sketches, models, and from other drawings with a different scale.

Throughout the year, three hours.

COURSE V—Applied Mechanics. This course includes a study of the strength and elasticity of beams and columns, with the application of the principles of mechanics; in the first term to structures of steel and timber, and in the second term to structures of re-inforced concrete.

Throughout the year, three hours.

COURSE VI—Structural Mechanics. This course includes a study of strains and stresses with the application of the principles of mechanics to the design of roof and bridge trusses, and the determination of the dimensions and details of the same. Design of a simple bridge with working drawings.

Throughout the year, four hours.

PHYSICAL TRAINING.

For Young Men.—The object of this department is to give the student growth and increase of strength; to promote health and symmetrical development. These objects are accomplished by regular class exercises in the gymnasium during the fall and winter, on the field in the spring, and by periods of optional work after class hours. Physical measurements and strength tests of all students are taken upon entrance

and at the close of the college course and also at such other times as seem necessary. These form the basis of comparison of the students' conditions and needs, and determine the character and amount of exercise necessary to overcome marked deficiencies, irregular development, or such deformities as are amenable to physical exercise.

Students will receive personal advice with reference to habits of life, exercise, study, and recreation, as well as suggestions pertaining to personal hygiene.

Regular exercise, consisting of Swedish work, military gymnastics, Indian club, wand, and dumb-bell drills, principles of heavy gymnastics, is required of the men of the sophomore and freshman classes, three hours a week, from the middle of October to the middle of May. Elective work is offered the junior and senior classes.

For Young Women.—The aim of the work is to acquire a symmetrical development of the body as a basis for health and grace. The training is based on Delsarte Philosophy of Expression, and the Swedish and German systems of free movements and light gymnastics. All young women are required to take the prescribed work unless excused on recommendation of the instructor.

The general work includes Indian club and dumb-bell exercises, flexing exercises to overcome stiffness, exercises to develop control of the muscles, and all devices in training that secure freedom of bodily action.

The Gymnasium for Women is equipped with the

most modern apparatus. In addition to the regular class exercises opportunity is offered to do individual work under the direction of the instructor. In the basement of Hulings Hall there is a bowling alley for the exclusive use of young women.

REQUIRED WORK.

For graduation in any Group, all work specified as required must be completed, and additional subjects selected from the general list of electives sufficient to make a total of not less than one hundred twenty term hours. "Term hour" signifies one hour recitation weekly for one term of eighteen weeks. The prescribed work in physical training must also be completed. In the senior year a thesis and an oration are required. But in the Groups leading to the B. S. degree two theses or a thesis and an oration may be presented.

Sixteen recitations weekly is the regular number, but the Registrar may assign seventeen. No student may take more than seventeen or less than twelve hours' work without the approval of the Registration Committee. In no case will additional hours be allowed except on the basis of previous high grade work.

LIST OF ELECTIVES.

The following list of elective studies includes all subjects that are elective in any of the Groups. Some of the subjects are required in one or more of the Groups, but are elective in others. The list is open to all students under the conditions named below.

1. The student must be fully prepared for the work.

2. He must avoid all conflicts in hours.

3. So far as possible all required work below his rank and Group Electives must be completed before advanced electives are chosen. This rule may be waived in cases where it is necessary in order that the student may be ready for a particular line of work in the latter part of his course.

4. A study once elected must be pursued to the end of the year or to the completion of the subject. No credit for graduation will be given for partial courses unless by arrangement made with the instructor and the Registrar before the study is begun.

5. The student's choice of elective work must exhibit a definite and coherent plan.

6. The faculty reserves the right to disapprove choice of electives.

The Arabic numerals refer to the number of hour recitations weekly; the Roman numerals refer to the detailed description of the course of instruction found on pages 52 to 95.

	First Term.	Second Term.
Astronomy I	3	3
Astronomy II	..	2
Astronomy III	..	2

	First Term.	Second Term.
Astronomy IV	4	4
Biology I	4	4
Biology II	1	1
Biology III	3	3
Biology IV	4	4
Biology V	3	..
Biology VI	..	3
Biology VII	3	3
Biology VIII	..	3
Biology IX	4	..
Biology X	..	4
Biology XI	1	1
Biology XII	2	2
Chemistry I	4	4
Chemistry II	3	3
Chemistry III	4	4
Chemistry IV	2	2
Chemistry V	3	3
Chemistry VI	3	3
Chemistry VII	3	3
Chemistry VIII	4	4
Chemistry IX	3	3
Chemistry X	2	2
Chemistry XI	3	3
Economics I, II	3	3
Economics III, IV	2	2
Economics V, VI	2	2
Education I	3	..
Education II	..	3
Education III	..	3
English II	2	2
English III	3	3
English IV	3	3
English V, VI	2	2
English VII, VIII	2	2
English IX, X	3	3
English XI, XII	3	3
English Bible II	3	3
English Bible III	3	3

	First Term.	Second Term.
English Bible IV, V	3	3
English Bible VI, VII	3	3
French I	4	4
French II	4	4
French III	3	3
French IV	3	3
French V	3	3
French VI	3	3
French VII	1	1
Geology I	4	4
Geology II	3	..
Geology III	..	3
Geology IV	3	..
Geology V	..	3
German I	4	4
German II	4	4
German III	3	3
German IV	3	3
German V	1	1
German VI	3	3
German VII	3	3
German VIII	2	2
German IX, X	2	2
German XI	3	3
Greek I	4	4
Greek II	3	3
Greek III	3	3
Greek IV	3	3
Greek V	2	2
Greek VI	4	4
Greek VII	2	2
Greek VIII	2	2
Greek IX	2	2
History I	3	3
History II	3	3
History III	3	3
History IV	2	2
History V	2	2
Italian I	3	3

	First Term.	Second Term.
Italian II	2	2
Latin I	4	4
Latin II	3	3
Latin III	3	3
Latin IV	2	2
Latin V	2	2
Latin VI	2	2
Mathematics I	4	4
Mathematics I A	4	4
Mathematics II	4	4
Mathematics II A	3	3
Mathematics III	3	..
Mathematics IV	..	3
Mathematics V	3	3
Mathematics VI	2	2
Philosophy I	..	3
Philosophy III	2	2
Philosophy IV	2	..
Philosophy VI, VII	2	2
Philosophy VIII	..	2
Philosophy IX, X	2	2
Philosiophy XI, XII	2	2
Physics I	4	4
Physics II	1	1
Physics III	2	2
Physics IV	3	3
Physics V	4	4
Physics VI	2	2
Physics VII	3	..
Physics VIII	..	3
Political Science I, II	3	3
Political Science III, IV	2	2
Public Speaking I	1	1
Public Speaking II	1	1
Public Speaking III	1	1
Public Speaking IV, V	2	2
Spanish I	3	3
Spanish II	2	2
Surveying and Graphics I	3	3

	First Term.	Second Term
Surveying and Graphics II, III	3	3
Surveying and Graphics IV	3	3
Surveying and Graphics V	3	3
Surveying and Graphics VI	4	4

GENERAL INFORMATION.

COLLEGE FEES.

All students pay a fee of $100 a year, one-half payable at the opening of each term. This includes incidental, library, and gymnasium fees.

In the laboratories the following fees are charged each term:

Astronomy I, II	$ 2.00
Astronomy IV	7.50
Biology I	2.00
Biology III and IV	4.00
Biology V and VI	3.00
Biology VII, IX, and X	7.50
Biology VIII	5.00
Chemistry I	4.00
Chemistry II, III, VI, VII, VIII	7.50
Chemistry IV, IX	5.00
Geology I, II, V	2.00
Geology IV	6.00
Physics I	3.00
Physics IV, V	5.00
Surveying I	2.00
Surveying II, III, IV	3.00

In addition, breakage of material is charged at actual cost.

All college fees are due on the day of registration.

No student is admitted to class until all fees are paid or satisfactorily arranged for. No fees are returned except in case of sickness.

LIVING EXPENSES FOR YOUNG MEN.

The young men of the college board in Cochran Hall, in fraternity chapter houses, or in private families. The cost of board in Cochran Hall is $120.00 a year. The cost in chapter houses and private families is, as a rule, ten to twenty-five per cent. more. One half the room rent in Cochran Hall is due and payable at the opening of the first term and one half at the opening of the second term. A deposit fee of ten dollars is required when the room is reserved. This fee will be deducted from the second half year's payment. The rate for rooms varies from forty to eighty dollars a year for each student. All rooms are to be surrendered not later than noon on Monday of Commencement Week. The amount for board in Cochran Hall is due as follows: $35.00 at the opening of the year; $30.00 on the second Monday in November; $30.00 at the opening of the second term; $25.00 on the third Monday in April. If the student has a roommate, the necessary expenses for a year will fall within the following estimates:

	Low.	Liberal.
Term fee	$100.00	$100.00
Room rent, fuel, light	40.00	50.00
Table board	120.00	125.00
Books	15.00	25.00
Total	$275.00	$300.00

To be added to these figures are the laboratory fees, if the student pursues studies in which such charges are made. The cost of books will vary greatly from term to term, but a fair average will fall within the limits given.

Expenses other than those enumerated depend largely upon the student's tastes and habits, and the college does not undertake to estimate them. For the items mentioned the figures given are exact. Few students will have occasion for spending more. This, of course, does not include traveling or personal expenses. An economical student can live on $250 a year.

A circular detailing the expense of living in Cochran Hall will be sent on request.

YOUNG WOMEN.

Allegheny College is a co-educational institution. It endeavors to give young women the highest educational advantages open to young men. Instruction is given in the same subjects and by the same professors; and young women have access to all departments of the college, and are eligible to all honors. For students desiring to combine music with college work, opportunity for excellent instruction is afforded in the Pennsylvania College of Music.

Hulings Hall. Young women not living at home or with relatives are required to live in Hulings Hall. The constant aim is to furnish here an ideal college home for young women, where they shall be surrounded with influences which promote true and cultured womanhood. The hall is under the charge of the Dean of Women, whose influence, with that of her competent assistants, is constantly felt in the social, moral, and religious development of the young women under her care.

For the proper maintenance of the hall as a college

home for young women certain specific rules are essential, but it is the policy of the college to make only such regulations as will best protect the interests of those who reside there.

The rules governing the conduct of the young women of Hulings Hall were carefully drawn up by the Administration of the College and the Dean of Women, and by action of the Faculty entrusted to the Student Government Association of the hall, who assume the responsibility for the observance of all rules and regulations. Thus under the guidance of the Dean of Women and the Executive Board of the Association, the young women of the hall are given individual and community responsibility for their conduct in college life. A copy of the regulations for the government of the hall will be sent on request.

The residents of the dormitory maintain in the building the services of a resident trained nurse. This valuable addition to the hall life has been justified by the better conditions for health and comfort afforded the young women. For this purpose an assessment of a five dollar house fee is made payable at the beginning of the year.

The rooms are furnished with single beds, mattresses, pillows, chairs, and tables. Each resident supplies the following articles: sheets, pillow-cases, bed covering, towels, and napkins.

The rates by the year, including board, room, heat and light, are $200.00 for each student. The rooms are all double, so that two students occupy each room. In case a student desires to room alone, there is an additional charge of $50.00. Bills are payable in four

installments as follows: $60.00 the opening of the year, $50.00 the second Monday in November, $50.00 the opening of the second term, and $40.00 the third Monday in April. A deposit fee of $10.00 is required when a room is reserved. This fee is credited on the last payment of the year.

AID TO STUDENTS.

Self-Help.—Young men help themselves in several ways. A considerable number of the present students are earning their expenses in whole or in part. Some are employed in light work connected with the college or the boarding clubs. Some find in town opportunities for work of various kinds. A few are serving churches in the neighborhood of Meadville. It is the policy of the college to help students that help themselves.

The Lindley Endowment.—By the will of the late Miss Lucy Lindley, of Meadville, the college received the sum of ten thousand dollars, the interest of which is used to assist students dependent upon their own efforts to obtain an education. Application for aid from this fund should be made to the President. It should be remembered, however, that only a limited number of students can be aided in this way.

The Ballantyne Scholarship Fund.—In 1904 Mrs. Hettie F. Ballantyne, of Pittsburgh, gave to the college thirty thousand dollars in memory of her husband, James Alexander Ballantyne; the fund is known as the James Alexander Ballantyne Scholarship Fund. The income is used to pay the college term fees, and in cases of need, certain other expenses, of the sons and

daughters of ministers of the Pittsburgh Conference, and of young men from within the bounds of that conference who are studying for the ministry. This fund is administered by the officers of the college faculty on recommendation of a committee of the Pittsburgh Conference.

The George W. Wright Scholarship Fund.—This is a gift of $1,000 from the Honorable George W. Wright of Mercer, Pa., a former student of Allegheny College. The proceeds of this fund is to constitute a scholarship to be awarded each year on the nomination of Mr. Wright's representative.

High School Scholarships.—The Board of Trustees has established prize scholarships of fifty dollars each, to be awarded each year to honor students in the best high schools in the patronizing territory of the college. In case the graduating class numbers ten or less, the scholarshp must go to the one having maintained the highest scholastic rank during his high school course. If the class numbers more than ten, and less than twenty-five, it may go to the first or second in rank, and if there are over twenty-five in the class the scholarship may go to any one of the highest three. The amount of the scholarship is to be applied on the fees of the freshman year.

Educational Society Loans.—Students who are members of the Methodist Church, showing promise of usefulness in any form of Christian activity, may secure loans from the Educational Society. These loans are without interest and need not be paid in full until five years after graduation. These loans are offered not only to candidates for the ministry, but

also to all needy and worthy students who show promise of useful service in lines of Christian activity and are endorsed by the home Quarterly Conference. The loans are made by the Society on the recommendation of the faculty.

No aid from the above mentioned funds, or from any other source, is given to students who use tobacco.

A student having received aid from any of the college funds will be given a letter of dismissal to enter another college only after all such aid shall have been returned.

RELIGIOUS CULTURE.

The college was founded by Christian men for the promotion of Christian culture. It believes that education should always include, as its highest aim, the development of Christian character. It seeks to make the moral and religious life of the college community such that the student will be under as helpful influences as he would be in his own Christian home.

Chapel services are held each morning and all students are required to be present. Regular attendance on Sunday mornings at some church, selected by the student, or his parents, is also expected. Prayer meetings are held Wednesday evening of each week. The results are manifest in the quickening and strengthening of many in the religious life.

The Young Men's Christian Association and the Young Women's Christian Association are active and efficient organizations. Bible study classes and a mission study class are well attended.

The religious influences of the college is not in any sense sectarian, but Christian. On the rolls this year are representatives from seventeen Christian denominations.

THE ADVISER SYSTEM.

Each student on entering chooses some member of the faculty, who serves throughout the freshman year as a special counsellor on all matters in which the student finds the need of frank and friendly advice. The relation between adviser and student is intended to be perfectly fraternal, without restraint on either side. At the beginning of the sophomore year the professor under whom the student does his major work becomes his adviser for the remainder of his course.

HONOR SYSTEM.

All college examinations and quizzes are conducted under an honor system, by which the presence of instructors in the room is dispensed with, and the student is placed on his honor. The following signed declaration is required to make the examination valid: **"I hereby declare on my honor that I have neither given nor received aid in this examination."**

All cases of suspected fraud are dealt with by the Student-Honor Committee, who are authorized to decide on the question of guilt and to recommend to the faculty the penalty of dismissal from college in the case of a senior, junior, or sophomore, and, in the case of a second offense, a freshman.

CLUBS.

The Classical Club, composed of the instructors in the classical departments and about twenty-five ad-

vanced students, meets for the review of new books and current literature, and for the reading and free discussion of papers submitted by members on lines of classical investigation.

The Quill Club represents the journalistic and literary interests of the college. Its aim is to encourage press correspondents, to co-operate intelligently with the editors of the college publications, and to foster original and creative literary effort. It meets monthly. The membership is limited to thirty.

The German Club is an organization for students under the leadership of the professor of German that meets fortnightly for the purpose of arousing and sustaining interest in the German language as a vehicle of oral expression and of studying German life, institutions, and politics. Membership is open to all students who have had one or more years of regular class-room work in German.

The Philo-Franklin Forum is a society organized on the plan of a national deliberative body. At its weekly meetings various public and college problems are discussed, and parliamentary drill is afforded. Its membership consists of students who are especially interested in debate, under the guidance of representatives of the departments of English and Public Speaking.

Le Petit Salon meets fortnightly for the purpose of French conversation and study of French art, literature, etc. Its alternate sessions are in conjunction with the Meadville branch of the Alliance Francaise, an international organization. The membership is

limited to thirty and includes the instructors and advanced students in French.

The Modern Problems Club, under the head of the History Department, meets monthly for the discussion of current, social, economic and political problems. This club, which is a branch of the Intercollegiate Civic League, is limited to juniors and seniors.

The Tingley Biological Club, composed of instructors and advanced students in the Biology department, meets fortnightly for the presentation and discussion of papers by the various members; each member presents two papers a year dealing with some phases of biological research.

PRIZES.

Three prizes are open to competition by students of the college classes.

The Wakefield Oration Prize.—Mr. James A. Wakefield, of Pittsburgh, furnishes a prize of fifty dollars in the name of his grandfather, the Rev. Samuel Wakefield, D.D., awarded in February of each year, to the young man delivering the best oration. The winner of this prize represents the college in the Intercollegiate Civic Oratorical League Contest held in May.

The Philo-Franklin Oration Prize.—The old Philo-Franklin Literary Society has provided a permanent endowment fund of six hundred dollars for prizes in oratory. The income will provide a first and a second prize. The contest is open only to members of the Philo-Franklin Forum.

Heckel Prizes in Science.—Two prizes, a first prize of thirty-five dollars and a second prize of fifteen dollars, are given each year by Dr. Edward B. Heckel, of Pittsburgh. These prizes are awarded for the best two theses written by graduate or undergraduate students upon scientific subjects. The theses are presented on the first day of May and the prizes awarded the following Commencement Day.

ATHLETICS.

Outdoor exercise and athletic sports under the direction of competent supervisors are fostered as helpful in complete physical training, but are made consistently secondary to scholastic work. No student may take part in athletic events without the consent of the physical director after a physical examination. The athletic interests of the college are in the hands of the Athletic Association, to which all members of the college are eligible, and the business is managed and all funds administered by an Athletic Advisory Board, composed of four members of the faculty and five students. By an arrangement voluntarily entered into by the students, all young men pay $5.00 and all young women $3.00 for the support of athletics. For this they receive season tickets to all games. All details of athletic contests must receive the sanction of the Athletic Board, and every precaution is taken to insure clean athletics. Players must be *bona fide* students taking not less than twelve hours work, must have been registered at the opening of the year in which they compete, may not have more than one condition in any preceding work or be delinquent in the current term's work, and may not receive re-

muneration, directly or indirectly, for their services. The college is a member of the National Collegiate Athletic Association and conforms to the minimum eligibility requirements of that organization. Competent coaches are provided.

DEGREES.

The degree of Bachelor of Arts is conferred upon those who complete in a satisfactory manner A. B. Groups I-V. The degree of Bachelor of Science is conferred upon those who complete in a satisfactory manner any one of the Science Groups.

Bachelors of Arts of this College may pursue, in residence, work in not more than two distinct lines of study; and on the completion of a full year's work, including a satisfactory thesis, receive the degree of Master of Arts.

The Degree of Master of Science is conferred on Bachelors of Science on the same conditions as the degree of Master of Arts is conferred upon Bachelors of Arts.

Every person receiving a degree from the college pays a diploma fee of five dollars.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

Arnold, Floyd Elmer.....Athens
A. B., Allegheny College, 1915—Economics and History.

Baker, Charles Frank ..... Meadville
B. S., Allegheny College, 1915—Chemistry.

Bright, John ..... New Castle
B. S., Allegheny College, 1915—Biology.

Chase, Louise ..... Greenville
A. B., Allegheny College, 1910—Romance Languages.

Hayes, Wesley Glenn ..... Cambridge Springs
A. B., Allegheny College, 1913—Chemistry.

Jacobs, Homer R. ..... Emlenton
A. B., Allegheny College, 1915—Chemistry.

Reichel, Frank H. ..... Saegertown
B. S., Allegheny College, 1915—Chemistry.

Ricker, George Albert ..... Dallas, Texas
B. S., Allegheny College, 1915—Chemistry.

Roberts, Elizabeth Mae ..... Meadville
A. B., Allegheny College, 1907—English and German.

Seniors.

Adams, Helen Rose ..... Meadville
Aey, Charles Arthur ..... New Castle
Allgood, Ruth Louise ..... New Castle
Amon, Fred Hughes ..... Greenville
Angove, Dortha R. ..... Oil City
Armstrong, William Jefferson, Jr. ..... Kane
Bail, Homer Milton ..... Conneautville
Bash, Lawson Greene ..... Crafton
Beatty, Vina Marguerite ..... Oil City
Bell, Samuel, Jr. ..... West Middlesex

Best, Josephine Elizabeth ..... Meadville
Bitler, Tillie Ella ..... Meadville
Blasdell, Robert Allen ..... Dayton, N. Y.
Burns, Jesse Erwin ..... West Sunbury
Campbell, Ginevra Isabel ..... Kittanning
Campman, Seeley Franklin ..... West Middlesex
Carroll, Catherine ..... Meadville
Carroll, Mary Carrier ..... Brookville
Cole, Helen ..... Meadville
Cox, Raymond Andrew ..... Kane
Curry, Albert Gore ..... Wilkinsburg
Depp, Walter Mark ..... Punxsutawney
Dickey, Frank Rumsey ..... Hartstown
Downing, Florence ..... Meadville
Drake, Homer Emmet ..... Ashtabula, O.
Dundon, Lewis J. ..... Edinboro
Ellis, William Andrew ..... Meadville
Foster, Lois Clara ..... Oakmont
Gaskill, Hazel Mary ..... Meadville
Gates, Helen Haldena ..... Oil City
Gealy, Fred D. ..... Oil City
Hall, Edith ..... Meadville
Harper, Daphne ..... Meadville
Harper, Harold Vernon ..... Butler
Hasek, Helen Georgia ..... Franklin
Hickman, Elmer Wallace ..... Arnold
Hoffman, Ray Earl ..... Phalanx, O.
Hudson, Ethel Gertrude ..... Greensburg
Johnson, Curtis Corydon ..... Meadville
Kelley, Martha Mae ..... Butler
Kendall, Ralph Newton ..... Conneautville
Kepner, Lee David ..... Hartford, O.
Kightlinger, Emma Florence ..... Meadville
Kleckner, Ethel Lillian ..... Meadville
Klinginsmith, John Glenn ..... Conneaut Lake
Latshaw, Paul Flemming ..... Kittanning
Leaf, Edwin Barnhardt ..... Irwin
Ling, Ernest Fitchard ..... Meadville
Lydell, Lulu Mae ..... Falconer, N. Y.
McKay, Leo ..... Sharon

McLean, Bailey Courtney ..... Meadville
Mackenzie, Helen Pithie ..... Oil City
Mellon, David Roy ..... Conneaut Lake
Miller, Marion Ruth ..... Erie
Munhall, Albert Francis ..... Meadville
Nash, Clarence Almerion.....Chautauqua, N. Y.
Nelson, Benn Elwin ..... New Castle
Phillips, Norman E. ..... Sheffield
Pierson, Harry H. ..... Meadville
Rankin, Harry Paul ..... Franklin
Reed, Earle Lyons ..... Butler
Reis, Wilbur Whippo ..... Cochranton
Rhoades, Robert L. ..... Mt. Pleasant
Rial, Leona Catherine ..... Ruffsdale
Ritchie, LaMarr ..... Indiana
Roberts, Georgia Pauline ..... Albion
Roberts, Nellie Genevieve ..... Meadville
Ross, Hazel Alma ..... Oakmont
Ross, Margaret ..... Chautauqua, N. Y.
Runninger, Guy Merle ..... Franklin
Sanner, Fred Henderson ..... Wilkinsburg
Scott, Walter Leland ..... Kane
Sheets, Sankey Lewis ..... Greensburg
Smith, Louise Crayne ..... Waynesburg
Smith, Margaret Elizabeth ..... Meadville
Stebbins, Dorothy Merle ..... Silver Creek, N. Y.
Stevenson, Charles Howard ..... Coraopolis
Strong, Anna ..... South Fork
Taylor, Blanche ..... Meadville
Tear, John W. ..... Painesville, O.
Thoburn, Bernice ..... Meadville
Waring, Emma Goodwill ..... Mansfield, O.
Whipple, Charlotte ..... Oil City
White, Edith Mary ..... Meadville
Wise, John Laing ..... Butler
Witherup, M. Lester ..... Franklin
Wolf, Charles R. ..... Rochester

Seniors, 87.

Juniors.

Acker, Lewis Franklin, Jr. ..... Meadville
Askey, Edwin Vincent ..... Bellingham, Wash.
Bacon, Frank Haskell ..... Meadville
Baird, Olga Gwendolyn ..... Meadville
Baker, Edison Howard ..... Greenville
Bourquin, Josephine ..... Conneaut, O.
Bowers, George Franklin ..... Big Run
Boyd, Nelson Henry ..... Sharon
Brooke, Julia ..... Uniontown
Campbell, Charlotta Marie ..... Meadville
Carew, Mary Katherine ..... Franklin
Carr, Georgia Edna ..... Bemus Point, N. Y.
Catherman, Raymond Fowler ..... Meadville
Chase, Elizabeth ..... Greenville
Clendenien, Miller Bartley ..... Tarentum
Clendenin, Mary Adelaide ..... Meadville
Clough, Veleda Louise ..... Corry
Craig, George Smith ..... Mercer
Curtis, Chalmer Clinton ..... Knox
Davison, Helen Miles ..... Oil City
DeLand, Ruth Elizabeth ..... Sheridan, N. Y.
Dewey, Ralph Smith ..... Ripley, N. Y.
Doane, Foster Baird ..... Butler
Drake, Lowell Claudius ..... Ashtabula, O.
Ellis, Murray Henry ..... Meadville
Fetzer, Lillian Marie ..... Meadville
Flahaven, Mary Ruth ..... Bemus Point, N. Y.
Frishkorn, Mark Wright ..... New Castle
Hanks, Eda Gertrude ..... Meadville
Hart, Rockwell Edgar ..... Girard
Hazen, Mildred Lucile ..... Titusville
Hendershot, Elizabeth Frazer ..... Meadville
Hill, Paul Emerson ..... Emlenton
Hodgkinson, Cecil H. ..... Meadville
House, Lillian Estelle ..... Conneaut, O.
Johnson, Hildur Eugenia ..... Titusville
Jones, Harry Albert ..... Meadville
Kahle, Carmen ..... Oil City
Kahle, Harold Bruce ..... Parnassus

Kahle, Raymond Frederick ..... Buffalo, N. Y.
Kelley, Ethyl Marie ..... Butler
Kramer, Norbert Clair ..... Meadville
Kulp, Helen Marie ..... West Middlesex
Lackey, Ira Cuttler ..... Stoneboro
Longanecker, Don Cameron ..... Khedive
McConnell, William Ethelbert ..... Parnassus
McKinney, Clarence Eugene ..... Meadville
Maxwell, Rachel Amanda ..... Meadville
Miller, Charles Miner, Jr. ..... Pittsburgh
Monroe, Grace ..... Meadville
Monroe, Lowell White ..... Meadville
Moore, Robert Law ..... Meadville
Mumford, Graydon William ..... Beaver Falls
Nebinger, Martha Kirk ..... Homestead
Neill, James Maffett ..... Clarion
Pappenhagen, Albert Burnell ..... Meadville
Peckham, Harold Dexter ..... Wickford, R. I.
Pitt, Ruth Elnora ..... Ripley, N. Y.
Powell, Fred ..... Kittanning
Preston, Bessie Cecilia ..... Monessen
Reider, Kenneth ..... New Castle
Richey, Mildred Irene ..... Vandergrift
Robinson, Agnes Cannon ..... Uniontown
Scott, Genevieve Annette ..... Corry
Scott, John Bell ..... Lynchburg, Va.
Shenefelt, Arthur Merle ..... Pitcairn
Shryock, Merwin ..... Meadville
Smith, Agnes Elizabeth ..... Meadville
Smith, Robert Gittens ..... Barbados, West Indies
Stolz, Pauline Gray ..... Meadville
Stone, Esther Alice ..... Butler
Strong, Leonel ..... Warren
Stroup, Gale French ..... Braddock
Swoap, Lewis Milton ..... Barnes
Sykes, Elizabeth Ritter ..... Franklin
Tarr, Jesse ..... Wellsville, O.
Thomas, Dale E. ..... Dorset, O.
Tuttle, Robert J. ..... Cattaraugus, N. Y.
Van Hoesen, Agnes Laidlaw ..... Meadville

Wagner, Charles Conroy ..... Barnes
Walker, Mabel Elizabeth ..... Harbor Creek
Warner, Helen Louise ..... Meadville
Weaver, John Carson ..... Turtle Creek
Weide, Ralph Lafayette ..... New Castle
White, Anderson McLean ..... Meadville
Wilber, Albert Bennett ..... Cambridge Springs
Witter, George Glenn ..... Wellsville, N. Y.
Yost, Robert ..... South Fork
Zuver, Dudley DeForest ..... Greenville

Juniors, 89.

Sophomores.

Baum, Helen Caroline ..... Franklin
Bianchi, Humbert ..... Ambridge
Bosworth, Howard Wilson ..... Corry
Brown, Mark Clemant ..... Pleasantville
Brumbaugh, Ruth ..... Franklin
Bryer, Clarence John ..... Linesville
Castle, Homer Levi, Jr. ..... Pittsburgh
Castle, John Granville ..... Pittsburgh
Cline, Byron Vito Travis ..... Apollo
Copeland, Maude Elizabeth ..... Meadville
Coulsan, Harry Edward ..... Mars
Deens, Louise Ferguson ..... Beaver
Dickey, Howard Carlysle ..... Oil City
Dowdell, Olive Sergeant ..... Beaver
Downing, Helen Louise ..... Meadville
Easterwood, Helen Cullum ..... Meadville
Elder, Myrtle Nina ..... Saybrook
Emery, Esther Louise ..... Mercer
English, Eva Janette ..... New Castle
Engstrom, Gustav Evan ..... Kane
Fogo, Helen Pauline ..... Wellsville, O.
Freer, Isabel ..... Galion, O.
Gartner, Annetta ..... Meadville
Graham, Ralph Edmundson ..... Pittsburgh
Hammerton, Ruth Florence ..... Meadville
Hartung, George Michael, Jr. ..... Evans City
Hazen, John Wallace ..... Hartstown
Holmes, Erwin Lawrence ..... Cleveland, O.
Howell, Jessie Elizabeth ..... Buffalo, N. Y.
Hulin, William Whann ..... Franklin
Hutchison, William James, Jr. ..... Ambridge
Isherwood, James Ernest ..... Canonsburg
Kelley, Ernest Jasper, Jr. ..... Chandler's Valley
Kinney, Alfred James ..... Meadville
Lackey, Scott Richard ..... Stoneboro
Lane, Paul Warren ..... Turtle Creek
Lashells, Theodore Baskin ..... Meadville
Linn, Hazel Bell ..... Espyville Station
McCloskey, Rodney Smith ..... Meadville

McConnell, Anna McCullough ..... Parnassus
McCreary, Robert Emmett ..... Monaca
McLain, Helen Elizabeth ..... Fredericktown
Mason, Dorothy Elizabeth ..... Meadville
Megahan, Donald Bruce ..... Wilkinsburg
Miller, Marion Frances ..... Butler
Minnium, Byron Biddle ..... Meadville
Mondereau, Pearl ..... Meadville
Moon, Helen Rose ..... Meadville
Nichols, Dorothy Winslow ..... Meadville
Ogden, Jesse Switzer ..... Rochester, N. Y.
Olson, Lena Marie ..... Knox
Pollard, William Michael ..... Saegertown
Pond, Frederick Logan ..... Meadville
Reamer, Ronald ..... Monessen
Regester, John Dickinson ..... New Castle
Rhoads, Christine Pauline ..... Butler
Richey, William Clyde ..... Titusville
Robinson, William Jabez ..... Uniontown
Saxton, Norene Roberta ..... Jamestown, N. Y.
Scannell, Martin James ..... Athens
Shorts, Hallie Daniel ..... Saegertown
Siggins, Marion Lucile ..... Meadville
Simpson, Gertrude Alice ..... New Brighton
Singleton, Paul Raymond ..... Parnassus
Singley, Adelaide ..... Meadville
Smith, Harold Leroy ..... Meadville
Spangle, Charles William ..... Dunkirk, N. Y.
Stearns, Paul ..... Meadville
Sturdevant, Laura Grace ..... Linesville
Swaney, Mary Agnes ..... Shadeland
Thomas, Marion Margaret ..... Meadville
Ware, Ralph Hartman ..... Greenville
Williams, Richard William ..... Rankin
Wiltsie, Harold Martin ..... Ashville, N. Y.
Wissinger, Harry Lawrence ..... Pitcairn
Wood, Irene Permilla ..... Pittsburgh
Woodard, Kersey Mendenhall ..... Linesville

Sophomores, 77.

Freshmen.

Abrams, Helen Ruth ..... Jamestown, N. Y.
Arnold, Mary Kathryn ..... Clarion
Averill, Esther ..... Pittsfield
Baer, Harold Kenneth ..... New Castle
Baker, Dorothy ..... Pittsburgh
Baker, Mary Josephine ..... Jamestown, N. Y.
Baldwin, Joseph Silliman ..... Washington, D. C.
Barr, Glenn Ross ..... Marienville
Beatty, Othello Ziegler ..... Butler
Bernard, Joseph ..... United
Biegert, Robert Brehm ..... Girard
Blair, Adda Caroline ..... Tiona
Bolard, Frederick Cowen ..... Cambridge Springs
Brooks, Leda Sussanna ..... Geneva
Brownell, Robert Foote ..... Smethport
Chapin, Margaret Oakes ..... Union City
Clother, Wells McDermott ..... Painesville, O.
Clouse, Mary Musette ..... Geneva
Cory, John Wesley ..... Linesville
Cribbs, Hyatt M., Jr. ..... Verona
Culligan, Leo Paul ..... Corry
Curry, Ethel Virginia ..... Meadville
DeRemer, Paul ..... Andover, N. Y.
Deutsch, Arthur Watson ..... Meadville
Douds, Gladys May ..... Meadville
Dunbar, Lucile Harriet ..... Meadville
Eberlee, Stanley Lee ..... Cattaraugus, N. Y.
Edwards, Cecil Asenath ..... Oil City
Eiler, Helen Adelaide ..... Meadville
Ellis, Ruth Moore ..... Meadville
Falkinburg, Rae Edgar ..... Meadville
Faulkner, Robert Lee ..... Corry
Filer, Enoch Crawford ..... Greenville
Fithian, Ruth ..... Butler
Flick, Parker Chambers ..... Tionesta
Fowler, Richard ..... Stoneboro
Francis, Elizabeth Marie Louise ..... Columbus
Gates, Claire E. ..... Oil City

Goslin, Nelson Samuel ..... Arnold
Gould, Joseph Glenn ..... Warren
Hall, Earl Dewey ..... Meadville
Hamilton, Mary Eleanor ..... Butler
Harbaugh, John Williams ..... Victoria
Hart, Alvie Emerson ..... Blairsville
Hart, Raymond Lawrence ..... Saltsburg
Hauch, Henry Gregory ..... Meadville
Heckman, Edward ..... Meadville
Hetner, Fred Fridell ..... Greensburg
Hirst, George Edward ..... Dubois
Hodgkinson, Aileen Hayes ..... Meadville
Horth, Inda Arlean ..... Meadville
Horth, Pearl Helen ..... Meadville
Houghton, Margaret Martha ..... Barnes
Howell, Robert Pawling ..... Buffalo, N. Y.
Hutcheon, Allen Grant ..... Meadville
Jelbart, James Fred ..... Meadville
Johnson, Carl William Leonard ..... Wilcox
Johnson, Vesta Irene ..... Meadville
Judd, Cleaveland Chester ..... Meadville
Kelley, Malcolm Francis ..... Meadville
Kelly, Mary Agnes ..... Meadville
Kirkpatrick, Francis Earl ..... Renfrew
Kofoed, Volorous Beckwith ..... Silver Creek, N. Y.
Kuenzig, Raymond ..... North Girard
Laffer, Frederick Sackett ..... Meadville
Lavely, Herbert Alfred ..... Meadville
Lewis, Virginia Whitney ..... Johnstown
Leyda, Henrietta Elizabeth ..... Oil City
Linn, Alice Winnifred ..... Espyville Station
McCabe, Edna Carr ..... New Kensington
McCurdy, Harold Adams ..... Mercer
McEntarfer, Clifford Abraham ..... Union City
McKay, Winfield Rose ..... Meadville
McKinney, Arthur Wesley ..... Corry
Mansell, Thomas Dwight ..... Upper Middletown
Martin, John Owen ..... Charleroi
Mead, Charles Alexander ..... Charleroi
Megirt, James Goodrich ..... Union City

Miller, Ruth Pauline ..... Meadville
Monroe, Gertrude Elnora ..... Corry
Monroe, Hanson Hill ..... Painesville, O.
More, Hattie Susan ..... Youngsville
Morrow, Frank William ..... Union City
Muckinhoupt, Harry Bryan ..... Meadville
Mumaw, Martha Ruth ..... Scottdale
Munhall, Helen ..... Meadville
Myers, Fred Earl ..... Apollo
Neal, Meredyth ..... Union City
Norton, Grant Smith ..... Sherman, N. Y.
Patterson, Gordon Derby ..... Meadville
Peiros, Joseph Nisson ..... Pittsburgh
Phillips, Alvah Hooker ..... Pittsfield
Phillips, Anita ..... Meadville
Piper, Charles Edward ..... Derry
Randall, Clarissa ..... Union City
Reniers, Nellie Kinkead ..... Pittsburgh
Rhodes, Marjorie ..... New Castle
Richard, Ida Lucile ..... Meadville
Richmond, Charles Francics ..... Pittsburgh
Rishell, Madeleine Louise ..... Johnstown
Root, Louise Adaline ..... Cambridge Springs
Roudebush, Marjorie Eloise ..... Meadville
Rusterholtz, Jerome Bennett ..... McKean
Salchow, Serena ..... North East
Salguero, Mercedes Maria ..... Mayaguez, Porto Rico
Sheldon, Ralph Vail ..... North Girard
Sigendall, Esther Emelyn ..... Meadville
Simcox, Janet Haxton ..... Sandy Lake
Smith, Clyde James ..... Uniontown
Spieth, William Gladstone ..... Pittsburgh
Sprong, Amanda Ernastine ..... Buffalo, N. Y.
Stetson, George Arthur ..... Cambridge Springs
Stewart, F. Leslie ..... Franklin
Stockdale, Doris Marjorie ..... Stockdale
Stoner, Robert Glenn ..... Scottdale
Strickland, Helen Jeannette ..... Cattaraugus, N. Y.
Thoburn, Crawford Bennett ..... Meadville
Thomas, Terence W. ..... Meadville

Trumpeter, John ..... Monaca
Volk, John ..... McKeesport
Walker, Charles Lenwood ..... Mt. Pleasant
Walker, Herbert Elmer ..... Franklin
Weissenborn, Stanton Martin ..... Jersey City, N. J.
Welty, James Alman ..... Meadville
White, Marian ..... Kittanning
Widdowson, Olevia Rebecca ..... Mahaffey
Wilkinson, Edgar McKinley ..... Erie
Wilson, James Robert ..... Silver Creek
York, Zella Marion ..... Corry
Zehrung, Winfield Scott ..... Meadville
Zimmer, Helen Marie ..... Meadville

Freshmen, 131.

Special Students.

Brown, Firman Hewitt ..... Brookville
Buckner, Laurence Oliphant ..... Brocton, N. Y.
Byers, James Arthur ..... Meadville
Carmont, Alfred Joseph ..... Meadville
Clark, Joseph Walter ..... Jamestown
Conrath, Elmer Tansie ..... Indiana
Johnson, Charles Ray ..... Meadville
Jones, George ..... Cambridge Springs
Miller, Raymond John ..... Buffalo, N. Y.
Nash, Ralph Justin ..... Erie
Nolan, Eugene P. ..... Jamestown
Ward, Helen Marjorie ..... Pleasantville

Specials, 12.

SUMMARY.

	Men	Women	
Resident Graduates	7	2	9
Seniors	49	38	87
Juniors	53	36	89
Sophomores	44	33	77
Freshmen	77	54	131
Specials	11	1	12
Total	241	164	405

DEGREES CONFERRED
June 21, 1915.

Doctor of Laws.

William Burt
William Preston Few
Arthur Arton Hamerschlag
Frederick William Hinitt
Frederic Clemson Howe
Samuel Black McCormick
Alexander Meikeljohn
Thomas Nicholson
William Arnold Shanklin
William Frederick Slocum
Edgar Fahs Smith
Edwin Erle Sparks
Franklin Chester Southworth
Philander Priestly Claxton
Charles Homer Haskins
Ida Minerva Tarbell
Andrew Carnegie

Doctor of Letters.

George Pierce Baker

Doctor of Divinity.

Ernest A. Bell
Herbert A. Ellis
Rogers Israel
Mark Kelley
William J. Lowstuter
William S. Mitchell
Lloyd L. Swisher
Thomas R. Thoburn
John J. Wallace
Paul Weyand

Master of Arts.

Frank E. Baker
John A. Gibson
Roger H. Motten
James G. Pentz
Julia Schoenfeld
Paul Sturtevant
Laura Temple

Master of Science.

Walter Hanchett Fegely

Bachelor of Arts.

Dorothea Blanche Abrams
Charles Vance Allshouse
Lazare B. Alssid
Floyd Elmer Arnold
Edith Maitland Askey
Harrison Lemley Askey
Mary Josephine Barkley
Faye Elizabeth Barnes
Harriette Burritt Bassett
Clair Frederic Brockway
Harold King Brooks
Alice Elizabeth Chapin
Viva Waive Chapin
Dorothy Dashiell
Irene Bessie Davenport
Melvin Allen Dotterrer
Robert Harold Downing
Hazel Marie Duffy
Donald George Dunbar
Douglas Mansor Dunbar
Charles Walter Dunlap
Esta Bernice Ebaugh
Janet Adelia Ellis
Charles Willis Flick
Katharine Roe Fowler
Ralph Louis Fox
Ethel May Gealy
William Albert Godsave
Oliver Gornall
Louise Mabel Gould
Orson James Graham
Hartley John Henry Hartman
Clyde Hartson Heath
Marie Julia Howell
Joe Berklett Hutchinson
Homer Riddle Jacobs
Linda Beatrice Johnston
Maree Elizabeth Jones
Alexander Hershman Kemp
Robert Philip Koehler
James Garfield Lane
Ruth Elizabeth Lavely
George Barden Leiphart
Iva Belle Lewis
Alfred E. Limber
Margaret Lucile Lippitt
Arley Von McCoy
Cecil Glen McCoy
Eleanor McKay
David McKinley
Arlene Josephine McKinney
Velma Frances McKinney
Margaret Grant McLean
Agnes Margaret McMahon
Charles Marshall MacConnell
Carl Cummings Miller
Harold Floyd Mook
Carl Leonard Mulfinger
Beatrice Maree Mullian
Ruth Grove Nebinger
Clara Lillian Nelson
Susan Evelyn Norris
Malcolm Rice Palmer
Rose Alta Platt
Hannah Marie Quinn
Pedro Ortiz Ramirez
Lillian Morton Reis
Caryl Moore Reynolds
Jeanette Goldstrohm Robinson
Margaret Mae Simpson
Helen Josephine Singley
Theodore Fell Smith
Jessie Bernice Smock
Edith Mildred Sutton
Annette Swartley
Carrie Ladds Swift

Harrie Smith Taylor Sarah Virginia Wiley
Helen Kissick Wing

Bachelor of Science.

Raymond Burgett Allmendinger
Cecil Boyer Baker
Charles Frank Baker
Howard Boyd
John Bright
Frank Gary Brooks
Howard Fred Brownell
Herman Henry Fahr
Carl Arlington Gilbert
Earl Brooks Gilbert
Ethel Mae Gillespie
Harry Vane Grant
Wendell Partridge Long
Melvin Guy Mellon
Malcolm McNaughton Metcalf
Clarence Arthur Miller
Louis Abell Pappenhagen
Frank H. Reichel
George Albert Ricker
Edward A. Robinson
George Albert Shaner
Stewart Strickler Townsend
Harry Christopher Wasson
Rex Duane Webster

Bachelor of Arts Nunc Pro Tunc.

Walter Irving Bates
John Battice Ford
David Jameson
James Robinson Mills
Frederick Palmer
James B. Siggins
Louis Edward Tieste
James Alfred Wakefield

PHI BETA KAPPA.

ETA CHAPTER OF PENNSYLVANIA.
Chartered September 2, 1901.

OFFICERS.

President.
President William H. Crawford.

Vice President.
Hon. John J. Henderson.

Secretary.
Professor William A. Elliott.

MEMBERS INITIATED IN JUNE, 1915.

From the Senior Class.

Clair Frederic Brockway
Howard Fred Brownell
Alice Elizabeth Chapin
Robert Harold Downing
Hartley John Henry Hartman
Marie Julia Howell
Homer Riddle Jacobs
Ruth Elizabeth Lavely
Melvin Guy Mellon
Beatrice Maree Mullian
Susan Evelyn Norris
Louis Abell Pappenhagen

From the Alumni.

Clementine Calvin, '82
William Jackson Lowstuter, '98
Roger Henwood Motten, '01
Julia Schoenfeld, '97

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THE COLLEGE BULLETIN

SERIES XVI, No. 1
FEBRUARY, 1917

CATALOGUE
1916-1917

ALLEGHENY COLLEGE

FOUNDED IN 1815

ONE HUNDRED AND SECOND YEAR

CATALOGUE

OF

ALLEGHENY COLLEGE

FOR

1916-1917

MEADVILLE, PA.
1917

THE ALLEGHENY COLLEGE BULLETIN

PUBLISHED QUARTERLY BY THE COLLEGE.

SERIES XVI, No. 1.
FEBRUARY, 1917.

Entered as second-class matter in the postoffice at Meadville, Pa.

CATALOGUE FOR THE ACADEMIC YEAR 1916-17

AND ANNOUNCEMENTS OF COURSES FOR 1917-18

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1917

APRIL

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1918

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CALENDAR.

1917.

April 24, Tuesday—Founders' Day.

25, Wednesday—Last day for Presenting Senior Orations and Theses.

May 10, Thursday—Choice of Senior Speakers.

30, Wednesday—Memorial Day, a holiday.

June 6, Wednesday—Moving-up Day, a holiday.

7-16, Second Term Examinations.

17, Sunday, 10:45 a. m.—Baccalaureate Sermon by President William H. Crawford.

5:00 p. m.—Vesper Service.

7:45 p. m.—Annual Sermon before the Christian Associations.

18, 19, Monday and Tuesday—Entrance Examinations.

18, Monday, 2:00 p. m.—Class Day Exercises.

4:00 p. m.—Annual Meeting of the Phi Beta Kappa Society.

7:30 p. m.—Phi Beta Kappa Address.

9:00 p. m.—President's Reception.

19, Tuesday, 9:00 a. m.—Annual Meeting of the Board of Trustees.

4:00 p. m.—Organ Recital.

7:30 p. m.—Commencement Concert.

20, Wednesday, 9:30 a. m.—Commencement Exercises.

1:00 p. m.—Meeting of the Alumni Association. Annual Dinner.

6:00 p. m.—Fraternity Banquets.

SUMMER VACATION.

1917

Sept. 18, Tuesday—First Term Begins.
17, 18, Monday and Tuesday—Entrance Examinations.
18, Tuesday—Registration of New Students.
19, Wednesday—Registration of Old Students.
20, Thursday, 8:00 a m.—Recitations Begin.
Nov. 7, Wednesday—Last Day for Submitting Subjects of Senior Orations and Theses.
29, Thursday—Thanksgiving Day, a holiday.
Dec. 21, Friday, 12:00 m.—Recitations Close.

CHRISTMAS RECESS.

1918.

Jan. 9, Wednesday, 8:00 a. m.—Recitations Resumed.
16, Wednesday—Last Day for Presenting Senior Orations and Theses.
Jan. 23-Feb. 1—First Term Examinations.
Feb. 1, Friday, 4:00 p. m.—First Term Ends.
Feb. 5, Tuesday—Second Term Begins. Registration of Students.
6, Wednesday, 8:00 a. m.—Recitations Begin.
7, Thursday—Wakefield Oratorical Contest.
14, Thursday—Day of Prayer for Colleges.
22, Friday—Washington's Birthday, a holiday. The College Dinner.
Mar. 6, Wednesday—Last Day for Submitting Subjects of Senior Orations and Theses.
22, Friday—Philo-Franklin Oratorical Contest.
29, Friday, 12:00 m.—Recitations Close.

SPRING RECESS.

April 9, Tuesday, 8:00 a. m.—Recitations Resumed.
24, Wednesday—Founders' Day.
24, Wednesday—Last Day for Presenting Senior Orations and Theses.
May 10, Friday—Choice of Senior Speakers.
June 19, Wednesday—Commencement.

BOARD OF TRUSTEES.

Ex-Officio.

HIS EXCELLENCY MARTIN G. BRUMBAUGH,
Governor of the Commonwealth.

HON. D. NEWLIN FELL,
Chief Justice of the Supreme Court.

HON. FRANCIS SHUNK BROWN,
Attorney General.

HARVEY HENDERSON, LL.D., . . . Pittsburgh
JOHN J. HENDERSON, LL.D., . . . Meadville
*REV. JOSEPH HORNER, D.D., LL.D., Pittsburgh
REV. JOSEPH W. MILES, D.D., . . Meadville
FRANK A. ARTER, ... Cleveland, O.
JAMES P. COLTER, ... Meadville
JAMES W. KINNEAR, ... Pittsburgh
GORTON B. CHASE, ... Greenville
REV. THOMAS H. WOODRING, D.D., . Pittsburgh
REV. ANDREW C. ELLIS, D.D., . . Pittsburgh
REV. WILLIAM H. CRAWFORD, D.D., LL.D., Meadville
JOHN E. RIGG, M.D., . . . Wilkinsburg
EDWARD APPLEYARD, . . Jamestown, N.Y.
WESLEY B. BEST, ... Meadville
JOHN V. RITTS, ... Butler
CHARLES MILLER, ... Franklin
JOHN S. CRAIG, ... Pittsburgh
AUSTIN BLAKESLEE, ... DuBois
REV. NOBLE G. MILLER, D.D., . . Blairsville
NELSON A. RIST, ... Dawson
*JOHN J. CARTER, ... Titusville
ARTHUR L. BATES, ... Meadville
SIMPSON S. FORD, ... Cleveland, O.
C. E. WELCH, ... Westfield, N. Y.
BISHOP JAMES M. THOBURN, D.D., LL. D., Meadville

*Deceased.

Sarah B. Cochran,	Dawson
Rev. Robert M. Freshwater, D.D.,	Cleveland, O.
George Greer,	New Castle
Byron A. Walker,	Erie
W. S. Horner,	Pittsburgh
Rev. J. M. Thoburn, D.D.,	Uniontown
Rev. C. W. Miner, D.D.,	DuBois
Ida M. Tarbell, LL.D.,	New York
Arthur W. Thompson,	Baltimore, Md.
Will N. Ridge,	New York
Edward B. Heckel, M. D.,	Pittsburgh
A. D. Deemer,	Brookville
C. H. Bagley,	Corry
Paul Sturtevant, A. M.,	Pittsburgh
James Thomas,	Johnstown
James A. Gibson, A. M.,	Butler

Officers of the Board.

Frank A. Arter,	President
John J. Henderson,	Vice-President
James P. Colter,	Secretary

Executive Committee.

William H. Crawford,	Chairman
James P. Colter,	Secretary

Frank A. Arter.

Wesley B. Best — Arthur L. Bates

Treasurer of the College.

George D. Thomas.

FACULTY.

WILLIAM H. CRAWFORD, D.D., LL.D.,
PRESIDENT,
Professor of Ethics.

WILLIAM A. ELLIOTT, A.M., L.H.D.,
Professor of Greek Language and Literature.

CLARENCE F. ROSS, A.M.,
Bradley Professor of Latin Language and Literature.
SECRETARY.

GEORGE A. MULFINGER, Ph.D.,
Professor of German Language and Literature.

CAMDEN M. COBERN, Ph.D., Litt.D.,
James M. Thoburn Professor of English Bible and Philosophy of Religion.

CHARLES J. LING, Ph.D.,
Mary M. Newton Professor of Physics and Astronomy.

OSCAR P. AKERS, Ph.D.,
Francis Asbury Arter Professor of Mathematics and Surveying.

RICHARD EDWIN LEE, Sc.D.,
Professor of Chemistry.

GUY EVERETT SNAVELY, Ph.D.,
Professor of Romance Languages and Literatures.
REGISTRAR.

ALICE HUNTINGTON SPALDING,
Intructor in Public Speaking.
DEAN OF WOMEN.

CHESTER A. DARLING, Ph.D.,
Professor of Biology and Geology.

CHARLES E. HAMMETT,
Professor of Physical Education and Director of Athletics.

FREDERICK G. HENKE, Ph.D.,
Truman D. Collins Professor of Philosophy and Education.

LUCIUS W. ELDER, Ph.D.,
Acting Professor of English Language and Literature.

STANLEY S. SWARTLEY, A.M.,*
Assistant Professor of English.

HOWARD PENNINGTON STEMPLE, A.M.,
Assistant Professor of Economics and Political Science.
(In charge of department.)

HENRY CLYDE HUBBART, A.B.,
Assistant Professor of History.

EDITH ROWLEY, A.M.,
Librarian.

KARL A. MILLER, B.S.,
Instructor in Mathematics and Surveying.

DANIEL H. G. MATTHAEI, A.B.,
Instructor in German.

---

* Absent on leave.

ROBERT CALVIN WARD, A.M.,
Instructor in French.

WALTER H. FEGELY, M.S.,
Instructor in Chemistry.

WILLIAM VANCE McCAY, A.M.,
Instructor in Greek and Latin.

GEORGE I. ADAMS, A.M.,
Instructor in English.

MARION I. COLBY, A.B.,
Instructor in English and Physical Education.

GEORGE JAMES HUCKER, A.M.,
Instructor in Biology and Geology.

ELEANOR CARR, A.B.,
Instructor in French.

M. LESTER WITHERUP, B.S.,
Assistant in Biology.

CHARLES A. AEY, B.S.,
Graduate Assistant in Physics.

FRED H. AMON, B.S.,
Graduate Assistant in Chemistry.

LA MARR RITCHIE, B.S.,
Graduate Assistant in Chemistry.

CHARLES W. CARES, B.S.,
Graduate Assistant in Mathematics.

COMMITTEES OF THE FACULTY.

Registration.

THE PRESIDENT — THE REGISTRAR
PROFESSOR ROSS — PROFESSOR LEE
PROFESSOR COBERN

Courses of Study.

PROFESSOR ELLIOTT — PROFESSOR MULFINGER
PROFESSOR LING — PROFESSOR HENKE
PROFESSOR STEMPLE

Discipline.

THE PRESIDENT — PROFESSOR ELLIOTT
PROFESSOR LEE

College Organizations.

PROFESSOR AKERS — PROFESSOR ROSS
PROFESSOR STEMPLE

Library.

PROFESSOR MULFINGER — PROFESSOR ELLIOTT
PROFESSOR HUBBART

Graduate Instruction.

PROFESSOR DARLING — PROFESSOR SNAVELY

Athletics and Gymnasium.

PROFESSOR LEE — PROFESSOR HAMMETT
MR. WARD

Accredited Preparatory Schools.

PROFESSOR ROSS — PROFESSOR COBERN
PROFESSOR DARLING

College Book Store.

PROFESSOR LEE

Catalogue.

PROFESSOR SNAVELY — PROFESSOR AKERS
PROFESSOR ELDER

College Council.

PROFESSOR LING — PROFESSOR AKERS

Men's Dormitories.

PROFESSOR HAMMETT — PROFESSOR DARLING

DESCRIPTION OF THE COLLEGE.

HISTORICAL SKETCH.

Allegheny College was founded in 1815 by citizens of Meadville, then a frontier village of some three or four hundred inhabitants. The first president was the Rev. Timothy Alden, a Presbyterian minister. The institution was chartered in 1817, and in 1820 the corner stone of the first building, Bentley Hall, was laid. In 1831 Dr. Alden resigned, and in 1833 the Rev. Martin Ruter, of the Pittsburgh Conference of the Methodist Episcopal Church, was elected to the presidency. The institution, while pronouncedly Christian, is conducted as the charter requires, on liberal principles, no person having any advantage, or being subjected to any disadvantage, on account of his religious views.

LOCATION.

Allegheny College is located in Meadville, Pennsylvania, on the main lines of the Erie and the Bessemer & Lake Erie railroads. An electric road gives direct connection with Erie and intervening points. Meadville has a population of about fifteen thousand. It is an old, well-established town, with attractive streets and residences, cultured society, and many educational influences. Being largely a residential town it has few of the disadvantages of city life. It has most

of the advantages of a city, such as paved streets, an effective sewerage system, an abundant supply of wholesome water from driven wells, arc and incandescent electric lights, natural gas, and an electric street railroad connecting all parts of the town with the college grounds.

The surrounding country is remarkable for its beautiful and diversified scenery. Within a short radius are some twenty miles of wild and rugged ravines of exceeding beauty, and the foothills of the Alleghenies which surround the town make the situation one of great attractiveness. The neighborhood is especially rich in material for the study of botany and geology.

BUILDINGS AND GROUNDS.

The college campus contains sixteen acres on the north edge of the town, nearly a mile from the business section, at an elevation of two hundred feet above French Creek and twelve hundred and fifty feet above the sea. It is abundantly shaded by numerous varieties of trees, many of them planted by students nearly a century ago. The ravine which passes through the campus and the situation overlooking the town and the valley for miles below, give a natural beauty hardly surpassed. The grounds are well provided with cement walks, and both grounds and buildings are kept in an attractive and sanitary condition.

The heating plant, situated in the upper ravine, supplies steam heat to all the college buildings. It is entirely adequate to the needs of the college.

Bentley Hall bears the name of the Rev. William Bentley, D.D., of Salem, Massachusetts, who gave

his valuable library to the college. The corner stone was laid in 1820. It consists of a central three-story building with tower, and two wings with massive pillars. The building contains the administration offices of the college and recitation and lecture rooms. The third floor is devoted to the halls of the literary societies.

During the summer of 1905 extensive improvements were made in the interior of the building. New hard wood floors and oak wainscoting were put in, and new furniture throughout has been provided. These changes, made at a cost of about seven thousand dollars, have rendered the building very attractive and entirely modern, without lessening its charm as a fine example of colonial architecture.

Ruter Hall, which bears the name of the Rev. Martin Ruter, D.D., the second president of the college, is a substantial brick building, erected in 1855, chiefly by the citizens of Meadville. On the first floor is the geological museum of the college. On the second floor are recitation rooms, a drawing room, an instrument room, and an office, used by the department of Mathematics and Surveying. The third floor, occupied by the department of Philosophy and Education, contains a lecture room, two laboratories, two offices and a store room.

Hulings Hall, a four-story brick building, ninety-four by one hundred forty feet, was erected in 1881, by Mr. Marcus Hulings, of Oil City, and citizens of Meadville. It is used as a home for young women, and accommodates about ninety. The building is well lighted and ventilated, is provided with fire escapes,

and is in thoroughly good sanitary condition. It has recently been almost entirely refurnished. The rear wing of the building contains on the fourth floor five large society halls; the first and second floors are occupied by the gymnasium for young women. The gymnasium has a clear floor space fifty-four by forty feet and is finished throughout in Georgia pine. It is provided with a full line of modern apparatus. In the basement are dressing rooms and baths.

Wilcox Hall of Science, named for Mr. and Mrs. Robertson Wilcox, of Girard, Pa., is a modern brick building built in 1892 for the department of Physics. It contains an amphitheater lecture-room, seating one hundred students, physical laboratories, and a basement work shop. There are ten working rooms. In the construction of the building especial care was taken to provide abundant light.

The Gymnasium, erected in 1896, adjoins the athletic field. It is in the early Italian style of round arched architecture, and is constructed of native stone and brick. The building is T-shaped in plan, the front portion being two stories high, exclusive of the tower. The first floor contains the director's room, locker rooms, and baths. On the second floor there are an assembly room and a committee room, both for general use. The gymnasium floor, which occupies the rear extension, has a clear space of forty-five by eighty feet unobstructed by pillars, the roof being supported by steel trusses. The building is equipped with the appointments of a first-class modern gymnasium.

Newton Observatory, completed in 1901, was made

possible by the gift of Mrs. Mary M. Newton, of Batavia, Illinois, in memory of her husband, Captain D. C. Newton, once a student in the college. It is a rock-faced stone building of fine architectural appearance, containing in addition to the observing room, a transit room, a computing room, and the director's office.

Ford Memorial Chapel was erected in 1901-2 through the generosity of Captain John B. Ford, of Creighton, Pa., in memory of his wife. It is of rock-faced Cleveland sandstone, in Gothic Romanesque style, with a spacious auditorium seating four hundred and fifty, besides a gallery seating one hundred and fifty, and an oratory seating one hundred and fifty. The rich stained glass windows and the harmonious interior appointments add much to the stateliness of the building.

The chapel is provided with a splendid pipe organ, the gift of the granddaughters of Captain Ford, Mrs. J. A. Ballantyne and Misses Nellie and Stella Ford, who contributed $6,000 for this purpose. The organ was designed by Mr. W. L. Mayer, of Pittsburgh, and was built by the late Julius Neef, of Philadelphia. It has three manuals and 1,920 pipes, and is supplied with the best devices of great modern organs.

The Library Building, the gift of an anonymous donor, was completed in 1902. Its dimensions are eighty-five by seventy-four feet. It is constructed of vitrified brick with terra cotta trimmings, in Italian-Renaissance style. In addition to the stack room with a capacity of sixty thousand volumes, it contains a cataloguing room, librarian's rooms, general reading

room, and a large reference reading room. On the second floor are the faculty room and the department seminar rooms. The interior appointments of the library are entirely in accord with the artistic character of the building.

Cochran Hall. By the generous gift of Mrs. Sarah B. Cochran, of Dawson, Pa., provision has been made for a College Commons for young men. The building is constructed of brick, with light terra cotta trimmings and tile roof. The architecture is of the Italian villa style with simple dignified lines, making the building, as a whole, the most imposing of the entire college group. The building contains on the first floor a reception hall, a main dining room, and a large lounging room for general purposes. The second floor is devoted to students' studies, sleeping rooms, and baths, and to a guests' suite. The building not only provides first class boarding accommodations, and at reasonable rates, but also constitutes a rallying center for the young men of the college. Apart from the dining room and the provisions for a dormitory, there are rooms for the Young Men's Christian Association, which are admirably adapted to their purpose. In addition to the spacious room to be used as assembly, reading, and social room there are an office for the secretary, a committee room, and a cloak room. Just off these apartments are four bowling alleys with shuffle board spaces adjoining.

Alden Hall. Since the burning of this building in 1915 it has been rebuilt and greatly enlarged into a modern two story structure for the department of Biology and Geology. Constructed of gray vitrified

brick and terra cotta and roofed with red Spanish tile, it forms an imposing building 60 feet wide by 120 feet long, with the main entrance on George Street. The spacious halls lined with cases for the display of biological specimens, the rough sand finish of the walls, and the stained-oak wood-work and furnishings produce a most pleasing interior.

The building is divided on the first floor into a large lecture room in the east end, a library, professor's office, two private laboratories, and four advanced laboratories; on the second floor into four large laboratories, two store rooms, an office, and a vivarium. The basement contains six rooms which are used by the department for aquaria, work shop, store rooms, etc. The building is exceptionally well-lighted and is well-equipped with tables, lockers, apparatus, etc. Electric lights, water, and gas are supplied to all of the rooms.

Carnegie Hall of Chemistry. This building is the latest addition to the group of college buildings and is devoted entirely to the use of the department of Chemistry. The erection of the building was made possible by a gift of $40,000 by Mr. Andrew Carnegie. This contribution was made with the understanding, however, that the trustees of the college add $10,000 to this sum for the building and, furthermore, that an additional $20,000 be raised for the purpose of providing a definite income for the maintenance of the building. The trustees not only met the terms of the gift but immediately appropriated a generous sum to be used for the purchase of adequate equipment of the laboratories.

With the completion of this building late in the year 1915, the college came into possession of a $70,000

plant for chemistry, not including the equipment, which will amount to approximately $20,000.

The building is constructed of buff tapestry brick with artificial stone trimmings, in the Italian villa style. The roof is of red Spanish tile. The interior structure is entirely of pressed steel. Owing to the fact that it was deemed advisable for hygienic purposes to substitute heavy four-inch wooden floors for cement, it is necessary to describe the building as "slow-burning construction."

There are twenty-four rooms in the building. All these rooms have been equipped as offices for members of the instructing staff, or as laboratories for the general courses in chemistry and for research work. The building is supplied with electricity, both A. C. and D. C., high pressure steam for operating steam-baths, and with that which appears to be a satisfactory system for ventilating hoods and laboratories.

LABORATORIES AND MUSEUM.

The Physical Laboratory. The department of Physics occupies Wilcox Hall of Science. It comprises a large, well-lighted lecture-room; a general laboratory; special laboratories for heat, light, and electricity; two dark rooms; the professor's office; and department library and store room. The lecture-room is well adapted to the giving of illustrated lectures; and the department has a very complete projection outfit and a good collection of slides. The department has also the facilities for the construction of special pieces of apparatus needed in the laboratory.

The Chemical Laboratories. The department of Chemistry occupies the building known as Carnegie

Hall of Chemistry. It consists of twenty-four rooms. On the first floor are located the offices of the instructing staff; reading room containing department library; laboratories for electro-chemistry, quantitative analysis, metallurgical chemistry, physical chemistry, water analysis, gas and fuel analysis; and the hygienic laboratory. The balance room, which is provided with suitable piers, is also located on this floor. On the top floor are found separate laboratories for general chemistry, qualitative analysis, spectrum analysis, and organic chemistry; stock room, preparation room combustion room, and the large lecture room. In the basement, which has been finished as the two upper floors with the exception of the cement floor, are located the laboratory for agricultural chemistry, small lecture room, stock rooms, and work-shops. The desks in all the laboratories are provided with outlets for compressed air, electricity, A. C. and D. C., as well as gas, water and vacuum pumps. The steam baths, which are supplied with high pressure steam, and the hydrogen sulphide outlets are located in glazed hoods, which are ventilated by forced draughts.

The Astronomical Observatory is equipped with a nine-inch equatorially mounted telescope, the objective of which was a gift of Mr. J. C. McDowell, of Pittsburgh, and was made by Brashear, of Allegheny, Pa. The graduated silver circles for this telescope were given by Mrs. Elizabeth Whiting, of Meadville. A seven and one-half inch instrument, made by Alvin Clark and Son, is also included in the equipment. Other equipment includes a transit, a chronometer, a sextant, and a sidereal clock. The clock is the gift of the children of Milton B. Goff, LL. D., in memory of

their father, an alumnus and former professor of mathematics in the college. The mountings and other fixtures of the observatory were supplied by Messrs. Warner and Swasey, Cleveland, O.

Through the generosity of Colonel J. J. Carter, of Titusville, Pa., there has been added to the equipment of the observatory an elaborate filar micrometer for use with the nine-inch, designed and made by George N. Saegmuller, of the Bausch-Lomb-Saegmuller Co., of Rochester, N. Y. From the same source comes a high grade six-inch mining transit fitted with a Saegmuller solar attachment and a Shattuck solar attachment, thus enabling the department to prosecute field work in astronomy which is of value to engineers. A chronograph, made by Gaertner, of Chicago, and a break circuit attachment for the clock complete the new equipment, which will enable the department to offer to the student work that will be comparable with other observatories having a glass of like magnitude.

Surveying Apparatus. In Mathematics and Surveying all necessary instruments, such as transits, levels, rods, and chains, for illustrating pure and applied mathematics are provided and are in practical use by the students in these subjects.

The Biological Laboratories, formerly located in restricted quarters on the third floor of Ruter Hall, now occupy, together with Geology, the entire building of Alden Hall, which has been rebuilt and greatly enlarged. This change has greatly increased the number of laboratories and has materially added to the efficiency of the department.

The laboratory for general biology is on the second floor; it is well lighted by north windows and is well equipped with modern laboratory tables, individual lockers, compound miscroscopes, and other apparatus necessary to accommodate the large number of students who elect this work. Adjoining this general laboratory is a laboratory for advanced zoology, in which hundreds of specimens illustrating the various orders of animals are displayed. On the south side on this floor is the vivarium, in which are still-water aquaria and insect cages; in the northwest corner is a large laboratory for advanced botany and for economic biology; this laboratory contains the herbaria of the local flora, including fungi, mosses, ferns, and seed plants; also hundreds of microscopic slides for use in these courses.

On the first floor is the large lecture hall supplied with student chairs, a balopticon with several hundred slides, and numerous wall charts; adjoining this room are the professor's private laboratory and a preparator's room in which demonstration material is prepared and stored. The bacteriological laboratory on this floor is equipped with lockers, two steam-pressure autoclaves, a multi-compartment, electrically heated incubator, hot-air sterilizers, microscopes, etc. Adjoining this room is the laboratory for histology and embryology supplied with microtomes, multi-compartment paraffin oven, incubators, compound microscopes with oil-immersion lenses, and other necessary apparatus. The laboratory for plant physiology is well equipped with apparatus for studying soils, for seed testing, etc. Opening from this room are a conservatory for growing plants and also a dark room for

photographic and experimental purposes. A library with the departmental books and magazines, an advanced bacteriological laboratory, professor's office, and a store room complete the rooms of the first floor.

In the halls are displayed numerous cases of birds, insects, skeletons, dissected and injected specimens, models, illustrative and museum material of various kinds. The laboratories throughout are equipped with microscopes and the necessary apparatus to carry on the work of the various courses offered by the department. The tables are supplied with electric desk lamps for use on cloudy days.

In the basement is a room with running-water aquaria for fish and amphibians, and several cages for mice used for demonstration work in heredity; a work shop and store rooms are also in the basement. In the rear of the building is a plot of ground which is to be developed into a botanical garden.

The Geological Laboratory is on the second floor of Alden Hall. It contains laboratory tables equipped for blowpipe work and provided with lock drawers for each student. The room is large and well lighted, and is supplied with electricity, gas, running water, and cases for maps, minerals, rocks, and reagents. Other equipment for geological and mineralogical work consists of several hundred topographic maps and geologic folios, several thousand minerals and rocks for both demonstration and working collections, crystal models, polarizing microscope, rock slides, a lantern with numerous slides, and a collection of fossils arranged in order of the geologic periods. This collection has been augmented materially by the gift of fos-

sils from Montana by Mr. Walter M. Small and by the gift and exchange of fossils by others.

A large room in the basement is used for the preparation and storage of minerals, rocks, and fossils.

The geological library consisting of several hundred volumes of government, state, and other publications is in the department library on the first floor of Alden Hall.

The Psychological Laboratory occupies four rooms on the third floor of Ruter Hall, and several additional rooms are at the disposal of students for experimental work. It is equipped with tables and the apparatus required for elementary experiments. New apparatus will be added as occasion arises.

The Natural History Collections are placed in the museum on the first floor of Ruter Hall and in Alden Hall. The geological and mineralogical collections are especially noteworthy and contain many valuable specimens, including several type forms. The more than eight thousand mineral specimens form an excellent collection and serve as a splendid basis for the course in mineralogy. The geological collections include the Smithsonian set of rocks and rock-forming minerals, besides numerous other specimens; while the paleontological collection includes the Ward casts and several original fossil forms. A collection of fossils, both local and from the glacial drift, has been presented to the college by Mr. William Millward.

The biological collections are also important. The herbarium has been greatly increased so that it includes most of the local flora, which is rich and varied and furnishes an abundance of material for the courses

in Botany. The zoological collection consists of several thousand specimens. It includes an excellent collection of shells, over two hundred mounted birds, several cases of economic insects, mounted skeletons, and numerous jars of prepared and injected specimens illustrating the various orders of animals.

The museum is open to the public every Saturday from ten-thirty until noon while the college is in session. At other times visitors are admitted on application to the curator.

THE LIBRARY.

The Library contains 44,000 printed productions, of which 32,000 are bound volumes. The remainder is made up of unbound periodicals and classified pamphlets. The additions by gift and purchase during 1915-16 were more than 1,200 volumes. A large number of reference books of a general and technical nature have been recently added to the good collection in the reference room, where 2000 volumes of books "reserved" for use in the various departments are shelved with the dictionaries, encyclopaedias, and general reference works. A dictionary card catalogue, and periodical and government document indexes make the general resources and the latest periodical information easily available. Especial attention has been given to completing the bound sets of the most valuable periodicals. The departments of Chemistry, Physics, Biology, Geology, and Astronomy have their several department libraries in the buildings where the work is done, and additions are made to these collections each year. The Library possesses many rare old books

from the Winthrop, Thomas, and Bentley foundations and a number of valuable old Bibles.

The following moneys have been given to create funds for the support of the Library:

Andrew Carnegie Fund.....$25,000
The income of this fund is to be used for general maintenance.

Lucy Prindle Foote Fund.....$ 5,000
A gift of Mrs. Lucy P. Foote, of Batavia, Ill., the income to be used for the purchase of books.

William Davis Memorial Fund.....$ 5,000
A gift of Mr. Henry L. Davis, of Philadelphia, Pa., in memory of his father, Mr. William Davis, the income to be used for the purchase of books.

Rev. Lynn Olin Mead Fund .....$ 500
A gift of Mrs. Martha S. Mead in memory of her late husband, the Rev. Lynn Olin Mead, the income to be used for the purchase of books.

The Library is housed in a modern building with large reading and study rooms, fitted with electric lights and steam heat. The administration aims to make the Library not only an auxiliary to the class instruction but also the center of the intellectual life of the college. The classical and literary clubs have headquarters in the building, and rooms are set aside for advanced classes studying along special lines; the rules are such as will allow the widest use of the books with only such necessary resrictions as will secure

the greatest good to the greatest number. The reading room regularly receives over one hundred periodicals, including technical department journals and dailies from the great cities and the best weeklies, both religious and secular. In addition to a very comprehensive list of the best home and foreign periodicals, the Campus and the Literary Monthly maintain an exchange table of college publications.

The Library is a government depository and also receives the state publications. Each department has an annual appropriation for the purchase of the latest technical and reference works. The access to such a wide range of books and periodicals, the training in the use of catalogues, bibliographies, reference works, and the wide range of technical and general periodical literature available are of great advantage to the student. A book service is maintained with the Carnegie Library of Pittsburgh by which almost any book not available here may be secured quickly and at slight expense to the student. Exchange relations are also maintained with several other libraries. The Meadville Theological School extends library privileges to this college, and the students have access to the Meadville Public Library, containing over 12,000 catalogued volumes.

The Library is open during the college year from 8 a. m. to 5:30 p. m. and three evenings a week.

GENERAL PURPOSE.

This institution is a college, not a university. It does not undertake to fit the student to enter a profession without further technical study. In all departments of instruction the end sought is not specialization but thorough discipline and correct habits of observation and reflection. It is on this principle that the curricula are based. Under the various groups about three-fourths of the subjects are prescribed. These studies are such as have been found to be best adapted to secure symmetrical development. A wide range of electives is offered, enabling the student to lay the foundation for subsequent professional study. By a wise choice of electives a student may in some cases shorten by a year the time required to complete his professional course. The experience of the college proves that its graduates are enabled to distinguish themselves in various careers whenever they have added to their college training the special equipment for a profession.

A large portion of college graduates enter not upon professional but upon business life. The general principle above stated applies to them with as much force as to those who enter professions. A college training does not teach a man how to do business successfully, but it does prepare him to do business rapidly, and to attain large success, if he has the requisite talent.

REQUIREMENTS FOR ADMISSION.

The requirements for admission are stated in terms of units. *A unit is defined as a course of study that has been pursued for a school year of at least thirty-six weeks, with four or five periods per week of not less than forty minutes each. However, not less than one hundred twenty periods of sixty minutes each or their equivalent shall be counted a unit. But it is understood that in the major subjects for entrance five periods a week will be required.*

No science subject may be credited for entrance unless accompanied by satisfactory evidence of laboratory or field work. Exceptions may be made in the case of physiology.

Subjects accepted for entrance:

	Minimum.	Maximum.
English	3	4
Mathematics	2½	4
Foreign Language	4	7
Latin		
Greek		
French		
German		

Not less than two units in any language will be counted, unless continued further in college.

History	1	4
Medieval and Modern	..	1
Ancient	..	1

English	½	1
United States	½	1
Civics	..	½
Drawing		
Free Hand	..	½
Mechanical	..	½
Science	1	4
Biology	½	1½
Chemistry	..	1
Physics	..	1
Physiography	..	½
Geology	..	½

Not more than one unit of Biology may consist of General Zoology or Botany. Physiology may count as much as one-half unit.

From the preceding list of units 15 must be offered for entrance to the freshman class. Of these, 11½ units are absolutely required and 3½ may be elected from any of the units in the foregoing list.

The 11½ required units are as follows:

English	3
*Mathematics	2½
Science	1
History	1
Foreign Language	4

For admission to A. B. Groups I and II, these 4 units will be in Latin; to Groups III, IV, and V, two

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* Students may be admitted with 2 units of Mathematics, provided they offer 15 units all told; but they will be required to complete in college a half year of Mathematics in addition to the regular Science requirement.

units must be in Latin; to B. S. Groups I-IV, there is no restriction concerning Latin.

The various groups are described on pp. 46-51.

For conditional admission in the aforementioned Latin prerequisite see page 84.

DESCRIPTION OF UNIT REQUIREMENTS.

ENGLISH.—The following is a definition of units one, two, three, and four, respectively, that may be offered as entrance credits in English:

(Unit one) Composition and Rhetoric.

(Units two and three) Selections from the list of required readings below.

(Unit four) A history of English or American literature, with additional readings from the English classics.

The study of English in school has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

Grammar and Composition. The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, sentences and paragraphs should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise letter-writing, narration, description, easy exposition, and argument. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of

using good English in his recitations and various exercises, whether oral or written.

Literature. The second object is sought by means of two lists of books, headed respectively Reading and Study, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads and with their place in literary history.

(A.) Reading. The aim of this course is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from each of which at least two selections are to be made, except as otherwise provided under Group 1.

GROUP I. Classics in Translation. The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther. The Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII. The Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI. The Aeneid. The Odyssey, Iliad and Aeneid should be read in English translations of recognized literary excellence. For any selection from this group a selection from any other group may be substituted.

GROUP II. Shakspere. Midsummer Night's Dream, Merchant of Venice, As You Like It, Twelfth Night, The Tempest, Romeo and Juliet, King John, Richard II, Richard III, Henry V, Coriolanus, *Julius Cæsar, *Macbeth, *Hamlet.

* If not chosen for study under B.

GROUP III. Prose Fiction. Malory's Morte d'Arthur (about 100 pages); Bunyan's Pilgrim's Progress, Part I; Swift's Gulliver's Travels (voyages to Lilliput and to Brobingnag); Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; Frances Burney's Evelina; Scott's novels, any one; Jane Austen's novels, any one; Marie Edgeworth's Castle Rackrent, or The Absentee; Dickens' novels, any one; Thackeray's novels, any one; George Eliot's novels, any one; Mrs. Gaskell's Cranford; Kingsley's Westward Ho! or Hereward the Wake; Reade's The Cloister and the Hearth; Blackmore's Lorna Doone; Hughes' Tom Brown's Schooldays; Stevenson's Treasure Island, or Kidnapped, or Master of Ballantrae; Cooper's novels, any one; Poe, selected tales; Hawthorne's The House of the Seven Gables, or Twice Told Tales, or Mosses from an Old Manse; a collection of short stories by various standard writers.

GROUP IV. Essays, Biography, etc. Addison and Steele's The Sir Roger de Coverley Papers, or selections from the Tatler and Spectator (about 200 pages); Boswell, selections from the Life of Johnson (about 200 pages); Franklin's Autobiography; Irving's selections from the Sketch Book (about 200 pages), or Life of Goldsmith; Southey's Life of Nelson; Lamb, selections from the Essays of Elia (about 100 pages); Lockhart, selections from the Life of Scott (about 200 pages); Thackeray's Lectures on Swift, Addison, and Steele in the English Humorists; Macaulay, any one of the following essays: Lord Clive, Warren Hastings, Milton, Addison, Goldsmith, Frederick the Great, Madame d'Arblay; Trevelyan, selections from the Life of Macaulay (about 200 pages); Ruskin's Sesame and Lilies, or selections (about 150 pages); Dana's Two Years Before the Mast; Lincoln, selections, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, the Letter to Horace Greeley, together with a brief memoir or estimate of Lincoln; Parkman's The Oregon Trail; Thoreau's Walden; Lowell's Selected Essays (about 150 pages); Holmes' The Autocrat of the Breakfast Table; Stevenson's An Inland Voyage and Travels with a Donkey; Huxley's Autobiography and selections from Lay Sermons, including the addresses on improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; a collection of essays by Bacon,

Lamb, DeQuincey, Hazlitt, Emerson, and later writers; a collection of letters by various standard writers.

GROUP V. Poetry. Palgrave's Golden Treasury (First Series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns; Palgrave's Golden Treasury (First Series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study under B); Goldsmith's The Traveler, and the Deserted Village; Pope's The Rape of the Lock; a collection of English and Scottish ballads, as, for example, some Robin Hood Ballads, The Battle of Otterburn, King Estmere, Young Beichan, Bewick and Grahame, Sir Patrick Spens, and a selection from later ballads; Coleridge's The Ancient Mariner, Christabel, and Kubla Khan; Byron's Childe Harold, Canto III or IV, and The Prisoner of Chillon; Scott's The Lady of the Lake, or Marmion; Macaulay's The Lays of Ancient Rome, The Battle of Naseby, The Armada, Ivry; Tennyson's The Princess, or Gareth and Lynette, Lancelot and Elaine, and The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa, Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus"—, Instans Tyrannus; Arnold's Sohrab and Rustum, and The Forsaken Merman; selections from American Poetry, with special attention to Poe, Lowell, Longfellow, and Whittier.

(B.) Study. This part of the requirements is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. The books provided for study are arranged in four groups, from each of which one selection is to be made.

GROUP I. Drama. Shakspere's Julius Cæsar, Macbeth, Hamlet.

GROUP II. Poetry. Milton's L'Allegro, Il Penseroso, and either Comus or Lycidas; Tennyson's The Coming of Arthur, The Holy Grail, and The Passing of Arthur; the selections from Wordsworth, Keats, and Shelley in Book IV of Palgrave's Golden Treasury (First Series).

GROUP III. Oratory. Burke's Speech on Conciliation with America; Macaulay's Speech on Copyright and Lincoln's Speech at Cooper Union; Washington's Farewell Address and Webster's First Bunker Hill Oration.

GROUP IV. Essays. Carlyle's Essay on Burns, with a selection from Burns' Poems; Macaulay's Life of Johnson; Emerson's Essay on Manners.

Examination. However accurate in subject-matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling, or other essentials of good usage.

The examination will be divided into two parts, one of which will be on grammar and composition, and the other on literature.

In grammar and composition, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors. The main test in composition will consist of one or more essays, developing a theme through several paragraphs; the subjects will be drawn from the books read, from the candidate's other studies, and from his personal knowledge and experience quite apart from reading. For this purpose the examiner will provide several subjects, perhaps eight or ten, from which the candidate may make his own selections. He will not be expected to write more than four hundred words per hour.

The examination in literature will include:

(A.) General questions designed to test such a knowledge and appreciation of literature as may be gained by fulfilling the requirements defined under (A.) Reading, above. The candidate will be required to submit a list of the books read in preparation for the examination, certified by the principal of the school in which he was prepared; but this list will not be made the basis of detailed questions.

(B.) A test on the books prescribed for study, which will consist of questions upon their content, form, and structure,

and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

MATHEMATICS.—Elementary Algebra. (One unit or one and one-half units.) The work in this subject should include the following: fundamental operations, factors, common divisors and multiples, involution including the binomial theorem for positive integral exponents, radicals, quadratic equations, ratio and proportion, theory of exponents, and arithmetic and geometric series.

A maximum of one and one-half units may be given when the time spent in preparing to meet this requirement be at least a year and a half. It is suggested that the work of the last half-year should be done late in the preparatory school course to insure a distinct and ready articulation with the required work of the freshman year in college. It is desirable that the student should come to his college work with well formed habits of neatness and accuracy, and that he have a ready knowledge of so much mathematics as he may have studied.

Plane Geometry. (One unit.) The general properties of rectilinear figures, similar polygons, and areas, and the measurement of polygons and the circle; the solution of original exercises, including loci problems.

Solid Geometry. (One-half unit.) The relation of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, cones, and the sphere; the solution of original exercises, including loci problems.

Advanced Algebra. (One-half unit.) A somewhat more extended treatment in review of the important topics of Elementary Algebra; such as fractional and negative exponents, radicals, factoring, the theory of quadratic equations (including maxima and minima, simultaneous quadratic equations, ratio, proportion, the progressions, and the binomial theorem for positive integral exponents). In addition to these, the following topics should be included; permutations and com-

binations, undetermined coefficients, partial fractions, logarithms, theory of equations, including Horner's method, and the solution of numerical equations of higher degree.

Plane Trigonometry. (One-half unit.) The definitions and relations of the six trigonometric functions as ratios, proofs of formulas, especially those for the sine, cosine, tangent of the sum or difference of two angles, the relation between functions of an angle and those of double angles and half angles, inverse functions, and the solution of right and oblique triangles with applications.

LATIN.—The following requirements, as proposed by the Commission on College Entrance Requirements in Latin, have been adopted by the college:

I. AMOUNT AND RANGE OF THE READING REQUIRED.

1. The Latin reading required of candidates for admission to college, without regard to the prescription of particular authors and works, shall not be less in amount than Cæsar, Gallic War, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Aeneid, I-VI.

2. The amount of reading specified above shall be selected by the schools from the following authors and works: Cæsar (Gallic War and Civil War) and Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust, (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Aeneid) and Ovid (Metamorphoses, Fasti, and Tristia).

II. SUBJECTS AND SCOPE OF THE EXAMINATIONS.

1. Translation at Sight. Candidates will be examined in translation at sight of both prose and verse. The vocabulary, constructions, and range of ideas of the passages set will be suited to the preparation secured by the reading indicated above.

2. Prescribed Reading. Candidates will be examined also upon the following prescribed reading: Cicero, orations for the Manilian Law and for Archias; and Vergil, Aeneid, I, II, and either IV or VI at the option of the candidate, with questions on subject-matter, literary and historical allusions, and

prosody. Every paper in which passages from the prescribed reading are set for translation will contain also one or more passages for translation at sight; and candidates must deal satisfactorily with both these parts of the paper, or they will not be given credit for either part.

3. Grammar and Composition. The examination in grammar and composition will demand thorough knowledge of all regular inflexions, all common irregular forms, and ordinary syntax and vocabulary of the prose authors read in the school, with ability to use this knowledge in writing simple Latin prose. The words, constructions, and range of ideas called for in the examinations in composition will be such as are common in the reading of the year, or years, covered by the particular examination.

The credits given are as follows: elementary Latin book, such as Collar and Daniell or Bennett, including the reading of at least fifteen pages of easy connected prose, such as Viri Romæ, one unit; Cæsar with composition, one unit; Cicero with composition, one unit; Vergil, one unit.

GREEK.—(One unit.) First Greek book and at least six chapters of Book I of Xenophon's Anabasis.

(One unit.) Xenophon's Anabasis through Book IV. Xenophon's Anabasis, Books, V, VI, and VII, of Xenophon's Hellenika, Books I and II, or twelve hundred lines of Homer. Prose composition based on the texts read.

(One unit.) Homer's Iliad or Odyssey, about three thousand lines. Thorough knowledge of poetic forms and prosody. About thirty pages of Attic prose with composition based thereon.

Throughout the work in Greek, emphasis should be laid on accurate knowledge of forms and the ordinary rules of syntax, on the ability to read Greek aloud correctly and expressively, and on the ability to write rapidly and correctly in Greek simple English sentences based on the texts read.

Students expecting to enter Greek I in college should offer at least two units of entrance Greek. Students without Greek for entrance may begin the subject in Greek A and in one year be prepared to enter Greek I.

GERMAN.—(One unit.) The first year's work should comprise: careful drill in pronunciation, dictation, memorizing of easy colloquial sentences, drill in the rudiments of grammar, i. e., the inflection of nouns, adjectives, pronouns, weak verbs, and the more usual strong verbs; the use of prepositions; the simplest rules of syntax and word order; simple exercises in conversation; and the reading of from seventy to one hundred pages of a graduated text from a reader or from editions of easy texts.

(One unit.) The second year's work should comprise: the reading of one hundred fifty to two hundred pages of literature in the form of easy stories and plays; a further study of syntax; conversation based on the text read; practice in the translation into German of easy variations upon the matter read, and also in off-hand reproduction, sometimes orally and sometimes in writing, of the substance of selected passages.

(One unit.) The work of the third year includes, in addition to the courses above, the reading of about four hundred pages of moderately difficult prose or poetry, with constant practice in giving, sometimes orally, sometimes in writing, abstracts, paraphrases, or reproductions from memory of selected portions of the matter read; also grammatical drill upon the less usual strong verbs, the use of the article, and the cases, the uses of the subjunctive and the infinitive, complex sentence structure, and the uses of modal auxiliaries and participial constructions.

(One unit.) The fourth year of the study should be devoted to such works as Goethe's Iphigenie, Tasso, Hermann und Dorothea, Schiller's Wallenstein, standard prose of the grade represented by Freytag or Keller, some consideration of the chief lyric poets, prose composition, and some practice in theme writing.

FRENCH.—(One unit.) First year French should comprise the following: (1) careful drill in pronunciation, which should be re-enforced by dictation and conversation in the class room; (2) study of grammar, including the more unusual irregular verbs; such as the material found in Part I of Fraser and Squair's French Grammar; (3) regular practice in putting simple idiomatic sentences into French;

(4) reading of about two hundred duodecimo pages of easy standard French, such as is to be found in the more popular French Readers, Malot's Sans Famille, Bruno's Tour de la France, the stories of Erckmann-Chatrian, etc.

(One unit.) Second year French should include: (1) continued work in dictation; (2) memorizing of short poems; (3) further practice of turning English into idiomatic French; (4) more detailed study of grammar, such as is contained in Fraser and Squair, Part II; (5) reading of some three hundred pages of standard French of gradually increasing difficulty, such as the stories and plays of About, Daudet, Labiche, Mérimée, Sand, Scribe, etc.

(One unit.) Third year French should comprise the reading of some five hundred pages of more difficult French, including some masterpieces of French drama. Moreover, the student should be able to reproduce and paraphrase into idiomatic French parts of the works read. Texts should be selected from the works of Balzac, Beaumarchais, Corneille, Hugo, Marivaux, Molière, Musset, Racine, Vigny, Voltaire, etc.

ANCIENT HISTORY.—(One unit.) To the fall of the Roman Empire. Texts—Botsford, West, Myer.

MEDIEVAL AND MODERN.—(One unit.) Texts—Myers, Robinson.

ENGLISH HISTORY.—(One-half or one unit.) Texts—Cheyney, Larned.

AMERICAN HISTORY.—(One-half or one unit.) Texts—Channing, Fiske, McMaster.

CIVICS.—(One-half unit.) Texts—Fiske, Hart.

FREE HAND DRAWING.—(One-half unit.) The candidate must possess the ability to sketch, both in outline and with shading, simple objects, such as a house, a small piece of machinery, a simple landscape, a group of geometrical figures, or an architectural ornament.

Certificates covering the above work, together with at least twenty specimen drawings, will be accepted.

MECHANICAL DRAWING.—(One-half unit.) The candi-

date must be able to make projections in plan and elevation of geometrical figures, and to prepare working drawings of simple architectural and mechanical subjects.

Certificates covering this work, together with at least twenty plates, illustrating the elements of Descriptive Geometry or of simple machine parts, will be accepted.

BIOLOGY.—Courses in Zoology, Botany, Physiology and Hygiene will also be accepted under this head provided they meet the requirements here given. Satisfactory outlines of courses are given in the syllabus published by the New York State Educational Department.

a. (One unit.) A course in General Biology extending throughout a year which shows the fundamental relationship between the animal and plant kingdoms and shows man's place in nature. A part of this course may deal with human physiology. The course must be accompanied with laboratory work and the student must be prepared to submit a laboratory notebook properly certified if required to do so.

b. (One-half to one unit.) Courses in General Zoology or General Botany of at least one half year in length. It is recommended that these be courses which deal with habits and ecological relationships as well as structure. Forms of animals or plants of local or of economic importance should be used as type forms as far as possible. Courses in Botany dealing solely with the flowering plants or courses in Zoology dealing solely with birds or insects will not be accepted. Laboratory work will be required in all cases and the student must be prepared to submit a properly certified note-book.

c. (One-half unit.) Physiology and Hygiene. This must be a one-half year course, and it is recommended that laboratory work be done with the course.

GEOLOGY.—(One-half unit.) The materials of the earth, the work of the atmosphere, ground-water, running water, snow and ice, the oceans and lakes, vulcanism and diastrophism; rock structures; the history of the geologic periods from the Archæozoic to the present. Laboratory and field work are required, for which a note-book is to be submitted.

PHYSIOGRAPHY.—(One-half unit.) The origin and sig-

nificance of the great relief features of the earth, and the topographic forms of the land; the earth as a planet; the atmosphere; the climate; weather predictions. Appropriate field and laboratory work must accompany the study of the text. Suitable text books are Salisbury's Briefer Course in Physiography, or Tarr's Physi al Geography.

CHEMISTRY.—(One unit.) The candidate's preparation in Chemistry should include: (a) The study of at least one standard text-book on General Chemistry, to the end that the pupil may obtain a comprehensive view of the more important facts of Elementary Chemistry. (b) Individual laboratory note-books, certified by the candidate's instructor, must be presented.

PHYSICS.—(One unit.) The amount and extent of the class work demanded for entrance in physics may be indicated by such texts as Millikan and Gale's First Course, Hoadley's Elements, or Carhart & Chute's High School Physics. In laboratory the work should include at least thirty quantitative experiments supplementing the class work, performed by the student, and recorded in a carefully prepared note-book.

ADMISSION WITH CONDITIONS.

Students who have not fully completed the subjects specified for the course they wish to enter may be admitted to the freshman class conditionally, but not if the sum of their deficiencies exceeds one fourth of a year's work, nor if in the judgment of the Registration Committee they are not fitted to do college work to advantage. They will be admitted to such college classes as they may be qualified to enter. Under certain fixed restrictions, credit may be obtained on entrance for work done in college subjects, and such advanced credit may be offset against deficiencies in preparatory work until the latter can be removed.

SPECIAL STUDENTS.

Persons desiring to pursue studies in the college are, as a rule, required to be prepared to enter the freshman class as candidates for one of the degrees. Under exceptional circumstances, however, persons who are not candidates for a degree may be admitted as special students and allowed to pursue selected studies. Every such person will be required to satisfy the faculty that he is prepared to do, with profit, the work which he selects. Each case will be decided on its own merits.

ENTRANCE EXAMINATIONS.

Examinations for admission are held on Monday and Tuesday of Commencement week, and on Monday and Tuesday preceding the opening of the first term.

All examinations except those taken in Meadville are under direction of the College Entrance Examination Board, whose certificates are accepted in all subjects in place of examinations.

ADMISSION BY CERTIFICATE.

In place of examinations in studies required for admission to college, certificates will be accepted from approved first class high schools having a regular four years' course, in case of students regularly graduating in such a course. Certificates will also be accepted in case of graduates of a three years' high school course, provided they pass entrance examinations in not less than three units additional to their certificate.

Certificates will not be accepted in case of students who are not graduates of the school from which the certificates are presented. *Students entering by*

certificate are considered as on trial until the completion of the mid-year examination, and the right is reserved to require further preparatory work from students who are not able to make satisfactory progress in college classes.

In all cases an examination in English is required, adapted to test the student's power of correct and idiomatic expression. No one will be accepted in English whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs.

Principals of schools desiring to have their schools placed on the approved list are invited to address the Registrar of the college.

Diplomas from the Regents of the State of New York will be accepted. All other certificates must be made out on special blanks, which will be sent on application.

The applicant for admission should bring with him all laboratory note-books, exercise books, and other evidence of work done, properly certified to by the teacher.

All candidates for admission must present satisfactory testimonials of good moral character; and certificates of regular dismissal will be required from those who have been matriculated at other institutions.

Requirements for Graduation to the Degree of Bachelor of Arts.

FRESHMAN YEAR.

	First Term.	Second Term.
English I	3	3
English Bible I	1	1
*Mathematics or Science	4	4

One course from each of two of the following departments: Latin, Greek, French, German, Political Science.

These two courses will count as part of the student's Group Electives as detailed on pp. 47, 48.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For Group I he should choose Latin and Greek.

For Group II he should choose Latin or Greek, and German or French.

For Group III he should choose French and German.

For Group IV he may choose any two of the subjects.

For Group V he should choose a language course and one in the History department.

Not less than fifteen and not more than sixteen hours are to be taken weekly.

*Candidates for the degree of Bachelor of Arts are required to elect fourteen term hours from the following courses: Astronomy I, Biology I, Chemistry I, Geology I, Mathematics I, Physics I, so that two departments are represented.

SOPHOMORE YEAR.

	First Term.	Second Term.
Mathematics or Science	4 or 3	4 or 3
History or Political Science	3	3

Group Electives [See pp. 47, 48] to make not less than fifteen and not more than seventeen hours weekly.

JUNIOR YEAR.

	First Term.	Second Term.
Philosophy II, V	3	3

This subject may be taken in the sophomore year if the student is to do his major work in philosophy.

Group Electives and Free Electives, to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis in the first term and an oration in the second term. See page 98.

Group Electives and Free Electives chosen from the list on pages 99-103 to make a total for the course of not less than one hundred twenty term hours.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of A. B. Groups I, II, III, IV, V, in which his work is to be done. The head of the department in which the major work is done becomes the student's adviser. See page 110.

A. B. Group I.

1. In one department, Greek or Latin.....20 hrs.
2. In a second department, Latin or Greek.....14 hrs.
3. In a third department, English, History, Philosophy, French, or German .....14 hrs.
4. In a fourth department, English, History, Philosophy, French, German, or Spanish..... 6 hrs.

A. B. Group II.

1. In one department, Latin or Greek.....20 hrs.
2. In a second department, French or German.....14 hrs.
3. In a third department, English, History, Philosophy, Latin, Greek, French, or German.....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin, Greek, French, German, or Spanish ..... 6 hrs.

A. B. Group III.

1. In one department, French or German.....20 hrs.
2. In a second department, German or French.....14 hrs.
3. In a third department, English, History, Philosophy, Latin, or Greek .....14 hrs.
4. In a fourth department, English, History, Philosophy, Latin, Greek, or Spanish ..... 6 hrs.

Students who present for admission less than two units in a modern language must, if this Group is chosen, take not less than eight hours additional to the above requirements, in the language chosen for the major subject.

A. B. Group IV.

1. In one department, English or Philosophy.....20 hrs.
2. In a second department, English, History, or Philosophy .....14 hrs.
3. In a third department, Latin, Greek, French, or German .....14 hrs.
4. In a fourth department, Latin, Greek, French, German, or Spanish ..... 6 hrs.

A. B. Group V.

1. In one department, History or Economics.....20 hrs.
2. In a second department, Economics, English, History, or Philosophy .....14 hrs.
3. In a third department, Latin, Greek, French, or German .....14 hrs.
4. In a fourth department, Latin, Greek, French, German, or Spanish ..... 6 hrs.

Requirements for Graduation to the Degree of Bachelor of Science.

FRESHMAN YEAR.

	First Term.	Second Term.
English I	3	3
English Bible I	1	1
Foreign Language: French, German, Latin, or Greek	4	4
Mathematics I	4	4
Science—Biology, Chemistry, Physics, or Surveying	4	4

This course will count as part of the student's Group Electives as detailed on p. 51.

The student's choice should be determined by the Group in which he intends to do his subsequent work.

For B. S. Group I, he should choose Biology.

For B. S. Group II, he should choose Chemistry.

For B. S. Group III, he should choose Physics.

For B. S. Group IV, he should choose Mathematics or Surveying.

SOPHOMORE YEAR.

	First Term.	Second Term.
*History or Political Science	3	3
Foreign Language, continuing the language taken in the freshman year	4 or 3	4 or 3

Group Electives [see page 51] to make not less than fifteen and not more than seventeen hours weekly.

*This work may be postponed to the junior year in case it is necessary for the student to continue a subject begun in the freshman year.

JUNIOR YEAR.

	First Term.	Second Term.
Philosophy II, V	3	3
Second Foreign Language, including Spanish	4 or 3	4 or 3

Group Electives and Free Electives to make not less than fourteen and not more than sixteen hours weekly.

SENIOR YEAR.

A thesis in the first term and an oration or a thesis in the second term. See page 98.

Group Electives and Free Electives chosen from the list on pages 99-103 to make a total for the course of not less than one hundred twenty term hours.

GROUP ELECTIVES.

At the beginning of the sophomore year each student shall record at the Registrar's office his choice of one of B. S. Groups I, II, III, or IV, in which his work is to be done.

The head of the department in which the major work is done becomes the student's adviser. See page 110.

B. S. Group I.

1. Biology ..... 20 hrs.
2. Chemistry ..... 14 hrs.
3. Physics ..... 8 hrs.

B. S. Group II.

1. Chemistry ..... 20 hrs.
2. Biology or Physics ..... 14 hrs.
3. Biology or Mathematics or Physics ..... 8 hrs.

B. S. Group III.

1. Physics ..... 20 hrs.
2. Chemistry ..... 14 hrs.
3. Mathematics ..... 8 hrs.

B. S. Group IV.

1. Mathematics or Surveying ..... 20 hrs.
2. Physics or Mathematics ..... 14 hrs.
3. Biology or Chemistry ..... 8 hrs.

COURSE OF INSTRUCTION

BY DEPARTMENTS.

In this detailed description of the courses of instruction the number of "hours" refers to the number of hour recitations weekly. Each term is eighteen weeks in length.

All courses are offered yearly, except as especially noted.

Any elective course may be withdrawn if not chosen by at least four students.

Two hours of laboratory work are counted as equivalent to one recitation hour.

ASTRONOMY.

The courses in Astronomy aim to give the student a comprehensive view of the science and to acquaint him with the theories of the development of the solar system and the structure of the universe. In all courses the student is required to study the members of the solar system, star clusters, nebulae, and other celestial objects with the aid of the instruments in the Newton Observatory.

COURSE I—General Astronomy. A study of the members of the solar system, the laws that govern their motions, and other phenomena. Also a study of the stars and nebulæ, with a discussion of the laws and theories of their relations. The important applications of astronomy to time determination, navigation, etc., find their places in this course. Finally the theories of cosmogony are outlined and the evidence that the heavenly bodies give in support of these theories is discussed. The student will be required to make systematic observations and to perform appropriate experiments in connection with the course. Open to students who have had a course in High

School Physics in addition to Mathematics I, or to those who have completed Physics I.

Throughout the year, three hours.

COURSE II—Field Astronomy. Determination of time, latitude, and longitude, with the transit, sextant, and chronometer. Open to those who have completed Trigonometry and Astronomy I.

Second term, two hours.

Given in 1918-19.

COURSE III—History of Astronomy. A course tracing the progress of the science from early times, including the work of the celebrated pioneers, down to the present day. Open to students who have completed Course I.

Second term, two hours.

Given in 1917-18.

COURSE IV—Spherical and Practical Astronomy. For advanced students. The theory of observation and instruments. The theory and practice of determination of time, latitude, and longitude. Eclipses and occultations. Double star observations. Positions of planets and comets with the nine-inch equatorial. Open to students who have completed Mathematics II, Physics I, and Astronomy I, and may be begun either in first or second term.

BIOLOGY.

The courses in this department are designed to acquaint the student with the great world of life in its different forms, functions, and uses. Considerable attention is given to details in observation and to a comparative study of forms, thereby training the student to observe accurately and to think clearly and logically. The economic aspects of the subject are considered with the view of presenting some of the great problems in the applied biological sciences.

A Biological Club exists for advanced students, in

which reviews of current biological literature or of research work of the student are presented.

COURSE I—General Biology. This course aims to give the fundamentals of the science considering life in its broadest aspects; various types are studied with the view of illustrating the various forms and functions of life and of showing the general principles of organic evolution. The first term is zoological in character, the second term botanical. The field work consists in the collection and identification of some group of animals or plants; in the laboratory a series of type forms is studied. Lectures and recitations two or three hours a week, laboratory and field work two hours and a half a week.

Throughout the year, four hours.

COURSE II—Principles of Biology. A course which deals with evolution, natural selection, mutation, genetics, including Mendel's Law, inheritance of acquired characters, eugenics, and the physical basis of life and heredity as found in the cell, together with the general facts and theories of development. Lectures and assigned readings. Open to all college students above freshman rank.

Throughout the year, one hour.

COURSE III—Advanced Botany. The structure and functions of the various organs of the seed plants are considered the first term, including the study of prepared material and experimental work on living plants in photosynthesis, transpiration, respiration, growth, and reactions to various stimuli. The second term's work is largely systematic and aims to acquaint the student with the local flora, including the algæ, fungi, mosses, ferns and seed plants. Field work forms an important feature of the course. Lectures and recitations two hours a week, laboratory and field work four hours a week. Open to students who have completed Course I, or its equivalent.

Throughout the year, four hours.

COURSE IV—Advanced Zoology. The external and internal

morphology of a series of animals illustrating the various classes are studied. The first term is devoted to the invertebrates, the second term to the vertebrates, including the dissection of various forms; the work of the first term is extensive, that of the second term intensive and largely comparative. Lectures and recitations two hours a week, laboratory work four hours a week. Open to students who have completed Course I, or its equivalent.

Throughout the year, four hours.

COURSE V—Economic Botany. This course is designed to give the student a knowledge of the history, distribution, methods of culture, and the uses of the various economic plants, such as those furnishing foods, fibres, flowers, drugs, timbers, etc. The cause and treatment of the diseases of the economic plants form an important feature of the work. Lectures and recitations two hours a week; laboratory work two hours a week. Open to students who have completed Course I, or its equivalent.

First term, three hours.

COURSE VI—Economic Zoology. A course corresponding to Course V, but dealing with economic animals. The major part of the time is spent in the study of insects and birds. Considerable attention is given to the identification and to the life histories of those insects which cause damage to cultivated crops. Lectures and recitations two hours a week; field and laboratory work two hours a week. Open to students who have completed Course I, or its equivalent.

Second term, three hours.

COURSE VII—Bacteriology. The aim of this course is to acquaint the student with the general distribution and activities of the micro-organisms. The laboratory work is designed to give the student training in bacteriological technique by growing and studying the morphology and physiology of some type forms. A quantitative and a qualitative analysis for micro-organisms is made of air, soil, and various food products, including water, milk, butter, etc.; the disease producing micro-organisms as well as those which cause fermentation and decay are studied. Lectures and recitations one hour a week;

laboratory work four hours a week. Open to students who have completed Course I.

Throughout the year, three hours.

COURSE VIII—Plant Physiology. A course which deals with the plant in its relation to its environment, including soil, light, heat, etc.; soil analysis, seed testing, plant breeding, and treatment of plant diseases are features of this course. This course and Courses III, V, and VI are recommended for those who anticipate teaching or studying agriculture or horticulture. Lectures and recitations one hour a week; laboratory work four hours a week. Open to students who have completed Course I.

Second term, three hours.

COURSE IX—Cytology and Histology. A course which treats of the structure of the cell and its various modifications into tissues; the laboratory work is designed to give the student training in technique and consists in the fixing, imbedding, sectioning, staining and mounting of various tissues, mostly from animals. Lectures and recitations one or two hours a week; laboratory work six hours a week. Open to students who have completed Course I, and preferably Course IV.

First term, four hours.

COURSE X—Vertebrate Embryology. This course includes the study of the development of the chick and of a mammal from the time of fertilization of the egg until fully formed. Preparation of microscope slides and the study of the various stages constitute the laboratory work. This course and Courses IV and IX are recommended for those who anticipate the study of medicine. Lectures and recitations one or two hours a week; laboratory work six hours a week. Open to students who have completed Course IX.

Second term, four hours.

COURSE XI—Human Physiology and Hygiene. This course treats of the various functions of the human body, including digestion, assimilation, excretion, irritability, etc.; the general care of the body, including foods, exercise, diseases, and their prevention will be considered. Open to all college students.

Throughout the year, one hour.

COURSE XII—Special Biology. This course is designed for students who are desirous of pursuing some line of biological work not included in the above courses. Open to students only by permission of the head of the department.

Hours to be arranged.

CHEMISTRY.

The courses offered by this department are intended to have both a cultural and a technical value. The work has been organized as the result of an endeavor to acquaint the student with the general and special principles of the work, to familiarize the worker with accurate methods of experimentation, to develop the ability to observe critically and accurately, and make correct inferences, and finally, to provide suitable preliminary training for independent research work.

COURSE I—General Inorganic Chemistry. This course concerns itself with the fundamental principles on which the science is based. The non-metals, metalloids and metals, together with their more important compounds, are studied. Energy as a factor in chemical reactions receives special attention, as also do the elementary principles of chemical dynamics and statics. Stress is laid upon certain processes and various materials in their application to the commercial arts. Each student has a desk in the laboratory at which the required experiments are performed. More elaborate experiments to illustrate lectures are performed by the instructor. Text-books: Lee's Text-Book of Experimental Chemistry and Mellor's Modern Inorganic Chemistry. Lectures and recitations two or three hours a week. Laboratory work two to four hours a week.

Throughout the year, four hours.

COURSE II—Analytical Chemistry.—Qualitative Analysis. —Bases and Acids. The student is required to work through a system of preliminary analytical reactions. The more intimate knowledge of the elements and their compounds thus

gained enables the student to verify the methods of grouping and separating the elements. At stated intervals, lectures and recitations will be devoted to discussions of all reactions. The modern theories of "solution," "precipitation," "chemical equilibrium," etc., receive much attention. Students are required at the conclusion of the work to analyze a given number of unknown substances without reference to the manual. Text-book: Lee's Qualitative Chemical Analysis. The work is arranged so as to include a brief course in Spectrum Analysis. Laboratory and lectures six hours a week throughout the year. Open to those who have completed Course I, or its equivalent.

Throughout the year, three hours.

COURSE III—Analytical Chemistry.—Quantitative Analysis. The aim of this course is to provide a thorough knowledge of the principles of gravimetric and volumetric analysis as applied to the separation and determination of the common bases and acids found in salts, minerals, ores, etc. It is of special value as a training in the more refined methods of manipulation. Each student is required to calibrate a set of weights and all volumetric apparatus. The ability to make a quantitative analysis of an unknown substance is the final requirement.

Electro-Chemical Analysis.—A brief course in electrolytic methods of analysis is included in this year's work.

Laboratory work, eight hours per week. All laboratory work is supplemented by lectures. Open to those who have completed course II, or its equivalent.

Throughout the year, four hours.

COURSE IV—Gas and Fuel Analysis. This course is offered because of the analyst's frequent need of this kind of training. It deals with the laws of gases, and with the various methods of determining the composition and calorific value of various gaseous, liquid and solid fuels. Lectures and laboratory work four hours a week.

Throughout the year, two hours.

COURSE V—Organic Chemistry. The work of this course begins with an historical sketch of the development of organic

chemistry, and a consideration of such topics as the nature of carbon, homology, isomerism, stero-isomerism, types of formulæ, nomenclature, and classification of organic compounds. The compounds of the aliphatic and aromatic series are then studied in detail. These compounds and processes which are of technical or theoretical importance receive special attention. This course is recommended to those students who contemplate the study of medicine or other phases of chemico-biological work, or chemical engineering. Course VI should be taken in conjunction with this course. Open to students who have completed Course II.

Throughout the year, three hours.

COURSE VI—Organic Preparations, Reactions, and Analysis. This is a laboratory course involving methods for the preparation and purification, and the analysis of a number of typical organic compounds. The physical and reaction properties, and the relationships of these compounds are then studied in detail. In the prosecution of this work the student becomes familiar with the apparatus and operations involved in the work of practical organic chemistry, such as crystallization, determination of melting and boiling points, fractional distillation, steam distillation, extraction, drying, determination of molecular weights; and with the general methods of preparation, such as etherifications, oxidation and reduction, saponification, nitration, sulphonation, diazotization, etc. The work in organic analysis includes in addition to the usual qualitative tests, quantitative determinations of carbon, hydrogen, nitrogen, and halogens. Laboratory work, six hours a week. Open to those who have completed or are taking Course V.

Throughout the year, three hours.

COURSE VII—Sanitary Analysis and Physiological Chemistry. The purpose of this course is to familiarize the student with the standard methods of making physical, chemical, and bacteriological examinations of air, water, milk, sewage, food, etc. Although attention will be given to the study of the distribution, cultivation, identification of various pathogenic microörganisms stress will be placed upon the chemical changes effected by these organisms. This course is recom-

mended to those who contemplate pursuing medicine as a profession or sanitary work. Opportunity is provided for practical as well as research work along this line. For example, blood, urine, and sputum are studied, with a view of emphasizing their diagnostic value; methods for testing efficiency of disinfectants are considered; etc.

Throughout the year, three hours.

COURSE VIII—Advanced Analytical Chemistry. Technical Analysis. This course offers opportunity for advanced students to study methods of analysis along special lines. It is designed to familiarize the individual with many of the analytical methods in use in commercial laboratories. Three lines of work are open to the student: (a) **Metallurgical Analysis,** which includes the analysis of those substances which are inorganic in their nature, such as iron and steel, alloys, silicates and sulphides, ores, cements, coke, and coal. (b) **Food Analysis,** which includes the analysis of those substances essentially organic in nature, as foods, and the detection of adulterants. (c) **Agricultural Chemistry,** which includes analysis of soils, fertilizers, dairy products, etc.

Special courses in **Biological Chemistry** and **Toxicological Analysis** are offered to students preparing for the profession of chemistry or the study of medicine.

Hours elective.

COURSE IX—Physical Chemistry. This course aims to give the student a general knowledge of the principles of the subject by means of lectures, reading, and laboratory work. This latter work will include the determination of "the heat of neutralization," "heat of solution," "speed of reaction," solubilities, molecular weights, conductivities, refractive indices, and an experimental study of various other physical and chemical constants. Six hours per week.

Throughout the year, three hours.

COURSE X—History and Development of Chemical Theory. This course endeavors to trace the development of chemistry from its earliest origins to the present time, by a study of the lives and influence of the men who have contributed to this phase of science. Lectures, collateral readings, and prep-

aration of theses. Open to students who have completed Course I.

Throughout the year, two hours.

COURSE XI—Industrial Chemistry. The work of this course has been outlined to meet the wants of those students who are particularly interested in the application of chemical processes to the commercial arts.

Throughout the year, three hours.

ECONOMICS.

This department is open to those who have completed one year in History or Political Science.

Particular attention is given to the study of the development of economic life and institutions, American conditions being specifically analyzed. Students are made familiar with the accepted principles of the science and are given a practical acquaintance with the complex modern economic organization. Encouragement is also offered to individual research, leading to possible future specialization. Lectures, papers, and comparative examination of various authorities constitute the method of instruction.

COURSE I—Principles of Economics. Introducing a survey of industrial history, production and distribution, compassing the accepted elements of the science. The text used is Seager's Economics, and required readings are assigned in the leading modern authorities.

First term, three hours.

COURSE II—Applied Economics. This is a continuation of Course I and is a detailed examination of the economic principles applied in trusts, labor, tariff, taxation, finance, and social conditions of today. Lectures, conferences, papers, and individual investigations are the methods of instruction.

Second term, three hours.

COURSE III—Money and Banking. A survey of financial

history and thought through modern times in various nations, with an intensive study of the theories, practice and legislation of the United States. Scott's Money and Banking is the outline text of the course.

First term, two hours.

Given in 1917-18.

COURSE IV—Economic Theories. History of the development of economic thought, including a study of the leading principles of the science as propounded in Adam Smith, Richardo, Mill, Senior, Menger, Wieser, Böhm-Bawerk, Walker, and Clark. The seminar method is used. Open to a limited number of those who have completed Courses I and II.

Second term, two hours.

Given in 1917-18.

COURSE V—Sociology. An inquiry into the underlying principles of the science of society, including a study of social control, organization, and psychology.

First term, two hours.

Given in 1918-19.

COURSE VI—Labor Organizations and Problems. This is a study of the development of trade unions, and their aims and practices. It also examines methods of industrial peace, employers' liability, and allied questions.

Second term, two hours.

Given in 1918-19.

EDUCATION.

The aim of the department is to give elementary instruction in pedagogy, with special reference to secondary education. The courses offered, together with Philosophy I, II, III, IV, and V, give the student ample opportunity to meet in full the requirements of the educational code of Pennsylvania for the Provisional Certificate.

COURSE I—History of Education.. The development of educational practice and theory in the ancient, medieval, and

modern world. Special emphasis upon Greek education, the advance in education inaugurated by the Renaissance, the chief modern educational reformers, and the modern movements in education. Lectures, text-book, collateral readings, theses, Open to juniors and seniors.

First term, three hours.

COURSE II—Principles of Secondary Education. A brief survey of the development of secondary education in Europe and America; the traits of early and middle adolescence, with special reference to the educational needs of the student; the organization, methods, curriculum, and problems of the high school; the place and function of secondary schools in the school system and in American life; the reorganization of secondary education. Lectures, text-book, supplementary readings. Open to those who have taken Philosophy II.

Second term, three hours.

Given in 1918-19.

COURSE III—Educational Psychology. The development of the mind in childhood and adolescence. The facts and principles of the learning process, with reference to instinct, habit, attention, interest, memory, formal discipline, etc. The psychology of writing and reading, Lectures, text-books, laboratory exercises. There will be two lectures and one laboratory period of two hours each week. Open to those who have taken Philosophy II.

Second term, three hours.

Given in 1917-18.

ENGLISH BIBLE.

The work in this department is intended to open to the student the rich stores of literature contained in the Bible; to familiarize him with the history of the Hebrew people, their civilization, and their influence on the world; and to lead to the critical study of the spirit and form of Hebrew literature as it is shown in the English version. The English Bible is studied as a great monument of our literature and as the source

of our knowledge of one of the great civilizations of the world. The courses do not touch questions of doctrine or belief.

COURSE I—A General Introduction to the English Bible. The evolution of the English Bible will be traced in detail and illustrated by rare original copies of the early translations. The history of the Hebrew people, as told by their own chroniclers, will be studied, especial attention being given to the picturesque biography and the historical crises which vitally affected the development of the nation. A general survey of the different types of literature to be found in the Old and New Testaments will be given. The student will be constantly reminded of the influence of Bible thought and phrase upon modern literature. Lectures must be taken down in carefully written note-books.

Throughout the year, one hour.

COURSE II—New Testament History and Literature. Stress will be laid on the importance of understanding the political and religious background of the New Testament life and thought. The growth of the Christian literature will be examined in outline, with constant reference to the new discoveries of contemporaneous documents, after which the life of Christ and the Epistles of St. Paul will be taken up in chronological order and studied both from the historical and literary standpoints. This will be essentially an interpretative course. Open to all who have taken Course I.

Throughout the year, three hours.

Given in 1917-18.

COURSE III—Old Testament History and Literature. The method here pursued is similar to that in the preceding course. The history of Palestine from the earliest times down to the IVth century B. C. is studied in connection with the life and development of the Hebrew people. The international connections of the Hebrews are traced, the marked eras of the nation's growth are sharply defined from the Conquest to the Exile, and the later origin of Judaism explained. The princi-

ples governing the proper interpretation of all Oriental writings are defined and applied to the early Bible narratives. The relation of the Bible to science is here examined. The literature of the Old Testament, taken up chronologically, is compared with contemporaneous writings. Particular attention is given to the origin, growth, and character of the legal literature and to the theology of the prophets.

Throughout the year, three hours.

Given in 1918-19.

COURSE IV—Biblical Archeology—New Testament. A careful examination will be made of the abundant archeological material illustrating the New Testament. Beginning with a brief sketch of modern discoveries of papyri, it will discuss the new light thrown upon the language of the New Testament and upon the ancient Greek MSS. and earliest versions, and will include a study of many Christian documents recently discovered—"Lost Gospels," libelli, prayers, hymns, sermons, letters, etc.—as well as the early funeral and other inscriptions found in Italy, Asia Minor, and Egypt.

First term, three hours.

Given in 1918-19.

COURSE V—History of the Early Church. This course will briefly consider the condition of the Christian Church at the death of St. Paul and for the quarter of a century following; will study the General Epistles and the Apocalypse of St. John in the light of contemporaneous events; and will examine the social and moral life of the early Church during the next three centuries, in the light of the patristic writings and newly discovered material.

Second term, three hours.

Given in 1918-19.

COURSE VI—Biblical Archeology—Old Testament. An extensive account of recent excavations in Egypt and Babylonia will be given and such new information as has been obtained concerning ancient customs and laws illustrating Bible usages. The world relations of the Hebrew people will be emphasized,

certain special important eras will be studied in detail, and the history connected with that of the surrounding nations will be presented. Contemporaneous literature will be examined and parallels with Old Testament literature noted.

First term, three hours.

Given in 1917-18.

COURSE VII—Jewish Life and Literature from the Fourth Century B. C., to the Beginning of the Christian Era. This will include a study of the influence of Persia and Greece upon Palestinian Judaism; a brief sketch of the political development, special attention being given to the war of independence under the Maccabees and its effects; a detailed examination of the rise of the Pharisees and Sadducees; a study of the Wisdom Books of the Old Testament and the non-Biblical Jewish works dating from this era, with particular reference to the Odes of Solomon and other recently discovered literature having marked influence upon the early Christian writers.

Second term, three hours.

Given in 1917-18.

ENGLISH LANGUAGE AND LITERATURE.

The aim of this department is to fit the student to use the English language as an instrument for the easy, idiomatic, and, energetic expression of his thought; to train him, both by theory and by practice, for natural and effective public address; to acquaint him with the essential facts in the development of the English language and literature, and with the great authors who have created that literature; and to render him sensitive to the literary and aesthetic values of life. Rigorous and painstaking habits of scholarship are constantly inculcated; but the student is never allowed to forget that literature is vital—that it draws its subject-matter and its inspiration from life and in turn transmutes the crude and imperfect forms of life into beauty and character.

COURSE I—The Elements of Rhetoric; Themes; and Selected

Readings in English Literature. This course aims to acquaint the student with the principles and the practice of the art of rhetoric, and to stimulate in him a desire for good literature. It is believed that successful instruction in rhetoric depends more upon example and practice than upon precept. With this in mind, examples of the best literature are kept constantly before the student. He is encouraged to write freely upon subjects that are familiar to him, and that spring naturally from the interests and the activities of his daily life. The instructors correct each paper in detail, and make appointments with each student for private consultation or for practice work in small groups. The instruction is made extremely flexible, and freshness and variety of method are constantly sought.

Throughout the year, three hours.

COURSE II—Introduction to English Literature. 1. An outline history of the development of English literature. 2. Collateral reading. 3. The study and interpretation in class of Shakspere's Hamlet, Milton's Minor Poems, and selections from Pope.

Elective for all students who have completed Course I, and required of all who desire to do advanced work in English.

Throughout the year, two hours.

COURSE III—English Poetry from 1789 to 1832. Copious readings from the poetry of Burns, Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats. The constant aim is to arouse in the mind of the student an intelligent enthusiasm for the great poetry of the period; and, while holding him to accurate and diligent scholarship, to show him how life and literature interpenetrate.

Elective for all students who have completed Course II.

Throughout the year, three hours.

Given in 1917-18.

COURSE IV—The Victorian Period of English Literature. Landor, Carlyle, Tennyson, Arnold, Ruskin, and Browning. Conducted in the same manner as is Course III, with which it alternates.

Elective for all students who have completed Course II.

Throughout the year, three hours.

Given in 1918-19.

COURSE V—American Literature. Outlines of its development. Lectures upon representative authors. The critical study and interpretation of masterpieces. Appreciations and essays by members of the class.

Elective for all students who have completed Course III or Course IV.

First term, two hours.

COURSE VI—Essayists of the Early Nineteenth Century. Jeffrey, Hazlitt, Lamb, DeQuincey, Hunt.

Second term, two hours.

Given in 1918-19.

COURSE VII—Shakspere. Analytic and interpretative studies of five plays of Shakspere. A careful reading of Dowden's Shakspere Primer is required in connection with this course.

Elective under the same conditions as Course V.

First term, two hours.

Given in 1917-18.

COURSE VIII—Prose Fiction.. Bliss Perry's A Study of Prose Fiction. Studies in the structure and the significance of the novel, the romance, and the short story. Illustrative readings and carefully prepared papers.

Elective under the same conditions as Course V, except that the class must be kept within small limits, and that advanced students who have shown special talent as writers will be given preference.

Second term, two hours.

Given in 1917-18.

COURSE IX—Anglo-Saxon. Bright's Anglo-Saxon Reader, with appropriate readings in reference books on the English language. This course aims not only to give a reading knowledge of Anglo-Saxon, but also to show the development of Anglo-Saxon into Modern English. Students intending to teach English are especially advised to enter this course.

Elective for all students above freshman rank who plan to do major or minor work in English.

First term, three hours.

Given in 1918-19.

COURSE X—Old and Middle English Poetry, not including Chaucer. The course includes such Old English poetry as Beowulf, the Wanderer, The Seafarer, and The Battle of Brunanburh; and typical Middle English histories, legends, romances, tales and lyrics. No special training in Anglo-Saxon or Middle English is necessary.

Elective under the same conditions as Course IX.

Second term, three hours.

Given in 1918-19.

COURSE XI—The History of the English Language. Consideration is given to such problems as the origin of language, the relationship of English to other languages, vocabulary, inflections, and syntax.

Elective under the same conditions as Course IX.

First term, three hours.

Given in 1917-18.

COURSE XII—Chaucer. This course considers the literary aspects of Chaucer's poetry. The life of the poet and the historical and the literary background of the period are studied. Many of the Canterbury Tales are read, and as much more of Chaucer's other poetry is included as time allows.

Elective under the same conditions as Course IX.

Second term, two hours.

Given in 1917-18.

FRENCH LANGUAGE AND LITERATURE.

It is the aim of the courses in this subject to give to the student: (1) an accurate knowledge of the language of the present time both as written and spoken; (2) an appreciation of the more important masterpieces of the literature proportionate to the knowledge of the language; and (3) a knowledge of the historical development of the literature.

The work as outlined above is carried on by means of recitations, written exercises and essays, lectures in

French, and by collateral readings. Much stress is laid from the beginning upon the ability of the student to express himself directly in the language. With this end in view the work of the class room is conducted in French, and phonetic methods are employed in order to give accuracy of pronunciation.

COURSE I—Elementary French. Fraser and Squair's Grammar is used as a reference book. Oral and written exercises. Dictation. Reading of easy prose.

Throughout the year, four hours.

COURSE II—Intermediate French. Reading of such authors as George Sand, Mérimée, Daudet, Augier, Dumas, etc. Memorizing of selected poems. In this course brief outlines of the history of literature are also given with collateral readings from celebrated authors.

Throughout the year, four hours.

COURSE III—French Literature in the Seventeenth Century. A study of the drama and of the miscellaneous literature of the period. Corneille, Racine, Molière, La Fontaine, La Bruyère, Pascal, Bossuet, Fenelon, Mme. de Sévigné, Mme. de La Fayette.

Throughout the year, three hours.

Given in 1917-18.

COURSE IV—French Literature in the Eighteenth Century. This course will treat of the time and influence of Voltaire, Montesquieu, Rousseau, the Encyclopedists, Beaumarchais, Lesage, Marivaux, André Chénier.

Throughout the year, three hours.

Given in 1918-19.

COURSE V—French Literature in the First Half of the Nineteenth Century. A study of the principal authors of this period: Chateaubriand, Lamartine, Victor Hugo, Alfred de Vigny, Alfred de Musset, Théophile Gautier, Sainte-Beuve, Balzac.

Throughout the year, three hours.

Given in 1918-19.

COURSE VI—French Literature after 1850. A study of the literary movements in France after the decline of Romanticism, with especial reference to the novelists and dramatists. Outside reading will be demanded in addition to rapid reading from a number of the authors of this period. A brief survey will be made of contemporary writers, including Rostand and Maeterlinck.

Throughout the year, three hours.

Given in 1917-18.

COURSE VII—French Prose Composition.

Throughout the year, one hour.

GEOLOGY.

Including Geography, Mineralogy, and Paleontology.

Geology deals with the constitution and history of the earth and the character, history and relationships of the developing life upon it. It explains many of the natural phenomena at hand, or that one meets in travel, and calls forth careful observation and clear thinking. The courses are planned to give thorough training in the principles of the subject and a sound basis for future industrial, economic, or professional work in its various departments.

COURSE I—General Geology. This course treats of the history of the earth together with its structure and physiography; attention is given to the various agencies which modify the earth's surface including the atmospheric, aqueous, igneous, and organic; the structure and kinds of rocks, formation of soils, and the deposits of the various economic materials including coal, oil, gas, ores, and precious stones are considered. Recitations three hours a week; field and laboratory work two hours a week. Open to those who have had a course in High School or College Chemistry.

Throughout the year, four hours.

COURSE II—Advanced Physiography. This course deals with the physiography of the lands and the oceans and with the atmosphere, especially in its relations to climate and weather conditions. Stress is laid on the method of development of topographic forms, and training is offered in field and laboratory methods in physical geography. In the laboratory and field, types of land forms, and the methods of making maps, and structural, longitudinal, and cross sections are studied. Recitations two hours a week; laboratory or field work two hours a week.

First term, three hours.

COURSE III—Commercial and Regional Geography. In this course a study is made of the geographic basis of commerce and commercial products, and stress is laid on the regional phase of the subject. A more detailed study of conditions in the United States is made the basis for comparison with conditions in other countries. There are many large manufacturing plants and shipping concerns in this region, some of which may be visited. Recitations three hours a week.

Second term, three hours.

COURSE IV—Mineralogy. Crystallography, blowpipe analysis, and determinative mineralogy. A minor part of the work in the laboratory deals with crystal forms and crystal models, and a major part with the study of about one hundred fifty minerals by means of the blowpipe and other physical and chemical tests. Open to students who have completed a year in Chemistry.

First term, three hours.

COURSE V—Paleontology. This course includes the study of invertebrate and vertebrate animal and plant fossils with reference to structure, classification, habitat, and geologic and geographic distribution. The permanency of certain types, the extinction of some groups, and the rise of new forms are noted with the bearing on the theory of evolution. Representatives of the various groups are studied in the laboratory and field. Recitations two hours a week; laboratory and field

work two hours a week. Open to students who have completed Course I and Biology I, or their equivalents.

Second term, three hours.

GERMAN LANGUAGE AND LITERATURE.

The methods employed in the first two years of this study are intended to establish a broad and thorough foundation for an appreciative study of German literature in the advanced courses. Accuracy and intelligent pronunciation are insisted upon; and the principles of phonetics are represented in simple form and are put to practical use in the reading exercises in the class room. In prose composition more attention is given to reproductive exercises and theme-writing than to translations. The oral use of the German language in the class room will be constantly increased until the recitations are conducted entirely in German.

A German Conversation Club, in which a special opportunity for linguistic practice is afforded, has been founded among the students of the college. Membership is open to those who have taken Course II, or its equivalent.

COURSE I—Elementary German. Zinnecker's Deutsch für Anfänger. Such reading as the following: Storm's Immensee, Baumbach's Im Zwielicht, Heyse's L'Arrabbiata, Goebel's Hermann der Cherusker, Wildenbruch's Neid, Schiller's Wilhelm Tell. Oral exercises based on the Gouin Series and oral and written reproduction of portions of the text read. The aim of this course is to enable the student to read and understand accurately German prose of ordinary difficulty and to acquire some proficiency in writing and speaking German.

This course represents from five to six terms of ordinary

high school work, but may not be taken to remove language requirements for admission to college.

Throughout the year, four hours.

COURSE II—Intermediate German. Reading of modern prose, modern comedy, and classical drama. One hour a week throughout the year will be devoted to prose composition, reproduction of texts in German, and short themes in German.

Open to all students who have credit for German I, or who present two years of German for admission to college.

Throughout the year, four hours.

COURSE III—Introduction to Eighteenth Century Classics. Lessing, Goethe, and Schiller. Two dramas of each are read in the order named and at least one work of each is critically analyzed. Monthly themes in German and a semestral essay in English. Collateral reading: Robertson's History of German Literature, chapters on the above poets. Alternates with Course IV.

Throughout the year, three hours.

Given in 1917-18.

COURSE IV—German Novel and Short Story. Rapid reading of one or more works of H. von Kleist, Eichendorf, Hauff, Hoffman, Stifter, Ludwig, Freytag, C. F. Meyer, Keller, Storm, Heyse, Fontane, Wildenbruch, Sudermann, and Rosseger. A part of this reading is done outside the class and is made the basis for written themes in German. Collateral reading: Robertson's History of German Literature, chapters on the authors read in class. Alternates with Course III.

Throughout the year, three hours.

Given in 1918-19.

COURSE V—German Conversation and Composition. The aim of this course is to train the student in colloquial German in speech and writing. Selections from modern authors are read to the class and reproduced from memory, and themes are written weekly on assigned subjects. The conversation is based on Kron's Daily Life and Vos' Materials for German Conversation. Given in conjunction with Course III. This course,

conducted in German, is especially intended for those who look forward to the teaching of German.

Throughout the year, one hour.

COURSE VI—Goethe's Life and Work. First Term. Reading of works illustrating different periods of Goethe's literary development, such as Götz von Berlichingen, Egmont, Torquato Tasso, and selections from Dichtung und Wahrheit. Collateral reading from Bielschowsky's Goethe.

Second Term. Goethe's Faust. Interpretation of the drama and discussion of its philosophic and ethical ideas.

In this course a considerable amount of collateral reading will be required. Alternates with Course VII.

Throughout the year, three hours.

Given in 1918-19.

COURSE VII—Nineteenth Century Drama. Kleist, Grillparzer, Hebbel, Ludwig, Gutzkow, Wagner, Hauptmann, Sudermann. Rapid reading of representative play of each. Short themes in German on the reading matter. Collateral reading: Robertson's History of German Literature, chapters on the authors read in class. Alternates with Course VI.

Throughout the year, three hours.

Given in 1917-18.

COURSE VIII—German Literature. A systematic study of German literature from the earliest times, with special emphasis on the Classic Periods of the Twelfth and Eighteenth Centuries. Lectures in German, reports, and readings. Collateral reading: Thomas' Anthology of German Literature, Woerner's Niebelungenlied, Schiller's Braut von Messina, and Goethe's Faust. Alternates with Courses IX and X.

Throughout the year, two hours.

Given in 1917-18.

COURSE IX—History of the German Language, and Advanced Prose Composition. A general survey of the historical development of the German language, with discussions of such linguistic problems as bear relation to current usage. Text-book: Behagel's Die Deutsche Sprache. Recitations and

lectures. This course is especially intended for those preparing to teach German.

First term, two hours.

Given in 1918-19.

COURSE X—Middle High German. Study of the dialect in its relation to modern High German, and readings from Hartmann von Aue's Der arme Heinrich, Das Niebelungenlied, and Walther von der Vogelweide's lyrics.

Second term, two hours.

Given in 1918-19.

COURSE XI—Scientific German. This course has been specially arranged for the student of science who is interested mainly in a reading knowledge of German. Open to students who have completed Course II.

Throughout the year, three hours.

GREEK LANGUAGE AND LITERATURE.

The aim of the department is to give the student a practical acquaintance with Greek life and thought. This can be adequately gained only through a first-hand knowledge of the literature. By accurate work in the first years of the study of the language the student can acquire the ability to read widely and independently.

It is realized that some students have been denied the opportunity to secure a mastery of the language who would be glad to have something of the inspiration that comes from contact with Greek culture and institutions. For such the courses in Greek art and in Greek literature in translation are available.

The department possesses a carefully selected collection of casts of antique sculpture, a considerable number of Greek vases and vase fragments, about a thousand photographs and several hundred lantern slides.

Students entering college without Greek may take Greek A, and be prepared to enter the later courses with a minimum loss of time.

GREEK A—Elementary Greek. This is a course intended to prepare students to enter Greek I, after a year of careful work. After the completion of some such book as Benner and Smyth's First Greek Book, selections are read from Xenophon and other Attic authors. Students of some maturity and reasonably well grounded in Latin will be prepared in one year to do the work in Greek I with profit.

Only in exceptional cases will this course, without further work in the subject, be counted for a degree.

This course may not be taken to remove entrance conditions.

Throughout the year, five hours.

COURSE I—Homer. The Iliad or the Odyssey. Detailed study of two books and rapid reading of as much more as the time allows. This rapid reading of the Homeric poems as literature is made the basis of the study of early Greek life and civilization.

Greek Composition.—A weekly exercise in composition based on passages from classic authors. The aim is to develop a vocabulary and an accurate knowledge of the fundamentals of Greek syntax. Dictation and impromptu writing of Greek are emphasized.

Throughout the year, four hours.

COURSE II—Lysias. Selected Orations. As an introduction to this part of the work a detailed study is made of the history of Athens in the Periclean age and of the Peloponnesian War.

Plato—The Apology and Crito and selections from the Phaedo. Outline of the history of Greek philosophy.

This course is made the basis of the study of historic Greek life and institutions.

Throughout the year, three hours.

COURSE III—Greek Drama. Detailed study of two plays and rapid reading of several others. Usually the following will be read: Aeschylus' Agamemnon, Sophocles' Oedipus

Tyrannus, Euripides' Iphigeneia in Tauris, and Aristophanes' The Frogs. The course is made not only a study of the origin and development of the Greek Drama, but also a study in literary evolution.

Throughout the year, three hours.

COURSE IV—Greek Oratory. Andocides, Isocrates, Demosthenes. The history and politics and the public and private antiquities of the times. Lectures and assigned readings.

Courses III and IV are offered in alternate years. In 1917-18 IV will be given. Open to all who have completed Course II.

Throughout the year, three hours.

COURSE V—Greek Testament. A close study of a portion of the New Testament, usually the Gospel of Mark. Familiar and accurate knowledge of vocabulary, syntax, and idioms is aimed at. Acts and some of the shorter Epistles are read more rapidly to develop facility in grasping the thought of the original. Much stress is laid on sight reading and on accurate but untraditional translation. The purpose of the course is to lay the foundation for exegetical work. Open to all who have completed Course II.

Throughout the year, two hours.

COURSE VI—Greek Literature. Survey of the field from Homer to the Roman period. One hour a week is devoted to lectures and text-book work, one hour is given to critical readings in English translations, and two hours to readings in Greek. Open to all who have completed Course II.

Throughout the year, four hours.

Courses V and VI are offered in alternate years. In 1917-18, V will be given.

The following courses are open to students that have completed Course I and to a limited number of juniors and seniors who have no knowledge of Greek.

Greek VII—Greek Literature in English. The course consists of the lectures, text-book work, and English readings of Course VI. Much attention is given to the development of literary forms. The growth of the Greek drama and its influence on modern drama are closely studied.

Throughout the year, two hours.

COURSE VIII—Classical Archeology. Egyptian, Babylonian, and Assyrian Art. Mycenaean Civilization. Greek Vase Painting. Greek Architecture.

Throughout the year, two hours.

COURSE IX—Classical Archeology. Greek Sculpture.

Throughout the year, two hours.

Courses VIII and IX are given in alternate years. In 1917-18, IX will be given. The instruction is mainly by lectures, but text-books are used and a large amount of collateral reading is required.

HISTORY.

The aim of the department is to give that knowledge of the facts and philosophy of history which belongs to a liberal education. The subjects in periods and countries are planned also to train for university work or to equip for preparation to enter law or journalism. The evolution of European civilization from its sources and the growth and influence of Anglo-Saxon institutions are the general theme of the work. History is presented as a real educative process. The department has the appropriate library authorities for the several courses, and source materials are freely used. Abstracts, maps, essays, and outlines are required in the class room. The method of instruction is a combination of lectures and text-book. Course I is required for admission to the succeeding courses.

COURSE I—European History. The period covered extends from the Teutonic migration to the French Revolution. The first term is given to medieval institutions and the transition to modern Europe. Thatcher and Schwill is the text for class guidance, with Robinson's European Readings and assignments in standard authorites. The second term is occupied with the growth of nationalities and the religious and political struggles

for balance of power. The Oxford series of Periods of History are the texts. One hour of lecture each week, with two hours of quiz and reports.

Throughout the year, three hours.

COURSE II—The Renaissance and the Reformation. The first term is devoted mainly to the Renaissance in Italy and subordinately in England. The political, intellectual, literary, and aesthetic phases of the movement are studied. Burckhardt and Symonds are the authorities used, with Einstein for the English Renaissance. The second term is occupied with the Reformation from Wycliffe to the Peace of Westphalia. The texts are Hausser and Fisher.

This course alternates with Course III.

Throughout the year, three hours.

Given in 1918-19.

COURSE III—French Revolution and Nineteenth Century. A lecture course with reference study in several authorities. The first term examines the causes and the progress of the Revolution and concludes with the Napoleonic Era. The second term covers Europe after the Congress of Vienna, tracing the formation of German and Italian unity and the continental triumph of liberalism. Hazen's Europe is used as an outline of the work.

Throughout the year, three hours.

Given in 1917-18.

COURSE IV—History of England. The work extends from the Teutonic origins to the Nineteenth Century. Lectures, collateral readings, and text-books. Gardiner's Student's History and Green's Short History of the English People furnish the outline; and references are required in the constitutional histories of Stubbs, Maitland, and Taswell-Langmead and in the works of Froude, Gardiner, and Lecky. This course alternates with Course V.

Throughout the year, two hours.

Given in 1918-19.

COURSE V—The Political and Constitutional History of the United States, from 1781 to 1877. The sources are extensively used as found in the government publications, the writings and

addresses of statesmen, and the contemporary interpretation of national affairs. Lectures, and reports by students on assigned readings in Schouler, Henry Adams, McMaster, Gordy, Rhodes and the American Nation Series. Monographs required of the class each term.

Throughout the year, two hours.

Given in 1917-18.

ITALIAN LANGUAGE AND LITERATURE.

This department offers two courses in which a thorough study of the grammar and a good reading knowledge is obtained. The first year is devoted to an intensive study of the grammar, and reading of easy modern texts. In the second year a study is made of the older Italian classics.

COURSE I—Elementary Italian. Italian Grammar, Grandgent. Oral and written exercises. Dictation. Texts such as De Amicis, Cuore; Goldoni, Il vero Amico; Manzoni, I Promessi Sposi.

Throughout the year, three hours.

Given in 1918-19.

COURSE II—Literature in the Thirteenth and Fourteenth Centuries. Dante, La Divina Commedia; Petrarca, Rime Scelte, etc.

Throughout the year, two hours.

Given in 1917-18.

LATIN LANGUAGE AND LITERATURE.

The courses in the Latin department are intended to direct the student to a systematic study of the language and its development, to acquaint him through a varied reading of the best authors with the leading features of the literature, and to make him familiar with the main facts of Roman history, life, and civilization. Technical grammar and composition are

studied only in so far as they contribute to the comprehension of the language. The department is well equipped with books, maps, and fac-similes of inscriptions and has a good collection of photographs, lantern slides, and antiquities for illustrative purposes.

The instruction is given by means of recitations, supplemented by lectures and, in the advanced courses, by individual work.

COURSE I—Cicero, De Senectute or De Amicitia. Selections from **Livy, Sallust,** and **Cicero's** Letters covering in outline the history of the Republic. Weekly exercises in Prose Composition.

This course includes a detailed review of Latin case structure and syntax, and a specific effort is made to teach right habits of reading and translation.

Throughout the year, four hours.

COURSE II—Horace, selected Odes and Satires.

The more common metrical structures are studied so that the Latin can be read with ease. Especial attention is directed to Horace's life and philosophy, and to as much of the history and customs of the period as sheds light on the subject matter.

Readings from Latin Verse of all periods. History of Latin Literature.

Throughout the year, three hours.

COURSE III A—Roman History. A brief introductory course of lectures on the history of Rome from the beginning to the Civil War period. Extensive readings in English, covering the same period. The Civil War and the Early Empire will be studied more intensively in connection with readings in Latin from Cicero's Letters and Tacitus' Annals. Reports and assigned readings in Mommsen, Heitland, Ferrero, Merivale, and the standard biographies.

Throughout the year, three hours.

B—Martial, selected Epigrams. General study of Roman Satire with comparative readings from other satirists. Collateral reading in the history of the period.

Quintilian, Institutions X. Lectures and discussions on Roman literary forms, and on Roman education.

Throughout the year, three hours.

One of these courses alternates with Course IV. Open to all who have completed or are taking Course II.

Given in 1917-18.

COURSE IV—Roman Private Life. Lectures on Roman Private Life with collateral readings in Latin, largely from Pliny's Letters, illustrating the subjects treated. In addition to the Latin readings, library readings and reports on specific subjects in connection with the course are required. The department has a collection of antiquities, charts, and models for illustrative purposes.

The course alternates with Course III. Open to all who have completed or are taking Course II.

Throughout the year, two hours.

Given in 1918-19.

COURSE V—Roman Topography. A lecture course which does not limit the field strictly to the topography of Rome, but attempts to give a general knowledge and appreciation of the City of Rome, its architecture, monuments, history, and customs, as well as its contribution to modern civilization and life. The department has a good collection of illustrative material—maps, topographical models, charts, photographs, and lantern slides. The library contains most of the important books in English needed for the course, in which students are required to do considerable collateral reading.

May be elected without previous preparation in Latin.

Throughout the year, two hours.

Given in 1917-18.

COURSE VI—Advanced Latin Composition. Practice in writing prose, with careful study of syntax and idiom. Individual work designed primarily for those who look forward to

teaching or to graduate work. One hour class work and one private conference weekly.

All students expecting recommendations to teach Latin should take this course. Open to all who have completed or are taking Course II.

Throughout the year, two hours.

Given in 1918-19.

NOTE.—For students entering college without complete preparation in Latin, instruction will be provided in such secondary Latin as may be required to satisfy entrance conditions.

MATHEMATICS.

The courses in this department are arranged with a view to develop in the student a certain degree of mathematical maturity and to familiarize him with the subject matter and methods of mathematical work, as well as to provide for the more or less technical and traditional requirements in the different mathematical subjects.

COURSE I—Algebra and Trigonometry. This is a continuation of the algebra required for entrance. Much attention is given to graphical representation of linear and quadratic equations, and the following topics are considered: mathematical induction and the binomial theorem for positive integral exponents, logarithms, undetermined coefficients, permutations and combinations, the theory of equations and an elementary treatment of determinants. The elements of trigonometry on the plane and on the sphere.

Throughout the year, four hours.

COURSE I A—Solid Geometry, Algebra and Plane Trigonometry. This course is offered to those who do not present solid geometry for entrance but who desire to continue their mathematical studies. It includes work in what might be termed intermediate algebra, rapidly reviewing quadratic equa-

tions and adding some new chapters. The course concludes with a study of plane trigonometry.

By arranging in advance with the instructor and the registrar, this course may be discontinued at the close of the section on solid geometry.

Throughout the year, four hours.

COURSE II—Analytic Geometry and Calculus. An elementary treatment of the fundamentals of analytic geometry, of two and three dimensions. This course includes a complete elementary treatment of differential and integral calculus.

Throughout the year, four hours.

COURSE II A—Selected Chapters in Mathematics. This course requires Course I or Course I A, and is composed of an introductory chapter on elimination, including the use of determinants; the study of the algebraic polynomial, by means of graphical representation; the analytic geometry of the line and the more important theorems of equations; the definition of a derivative; simple applications of the calculus to problems involving tangents, maxima and minima; and the study of elementary transcendental functions.

This course is especially adapted to those who are expecting to teach secondary mathematics.

Throughout the year, three hours.

COURSE III—Advanced Calculus. This course is a continuation of Course II. It should be taken by those who intend to pursue advanced work or are looking forward to work in applied mathematics. This course presupposes Course II or Course IIA.

First term, three hours.

COURSE IV—Differential Equations. An elementary treatment of differential equations, with applications to physics and mechanics. This course is necessary to a well-rounded course in mathematics.

Second term, three hours.

COURSE V—Projective Geometry. Lectures, supplemented

by reading. Reference books: Reye, Geometrie der Lage; Scott, Modern Geometry; Cremona, Projective Geometry.

Higher Plane Curves. The general properties of curves, the resolution of singularities, and forms of curves of the third and fourth orders.

Throughout the year, three hours.

Given in 1917-18.

COURSE VI—Functions of a Complex Variable. A general introduction to the theory of functions of a complex variable, following the methods of Weierstrass and Riemann.

Throughout the year, two hours.

Given in 1918-19.

PHILOSOPHY.

The courses of the department are planned with the following purpose: to bring about reflective views of human society and the world order; to establish an attitude toward life and its problems that will make the individual an efficient factor in promoting and conserving the welfare of his fellowmen; to lead the student to a better understanding of the laws of human nature, and to a critical study of himself; and to acquaint those desiring it with laboratory methods in psychology. The standpoint is in strict accord with the assured results of scientific research. Facts are brought together from the various fields of science, and presented in such a way as to produce breadth of vision in the interpretation of natural and social phenomena.

COURSE I—Logic. The nature and function of thought; the methods of science; errors of perception, memory, and testimony; immediate and mediate reasoning; material and formal fallacies; the logic of argumentation. Text-book, assigned

readings, lectures, and written exercises. Open to juniors and seniors.

Second term, three hours.

COURSE II—General Psychology. The structure and the functions of consciousness are exhibited by means of lectures, class-room demonstrations, and recitations. The subject is treated from the standpoint of natural science. Each student is required to perform a limited number of experiments. Open to juniors, and to sophomores who major in the department.

First term, three hours.

COURSE III—Experimental Psychology. An introductory course for students who desire to become acquainted with the methods of investigating psychological phenomena. Experiments in the psychology of the special senses, attention, memory, feeling, fatigue, reaction-time, etc. Lectures, laboratory work, and supplementary readings. Two hours of laboratory work for one hour of credit. Open to those who have taken or are taking Course II.

Throughout the year, two hours.

COURSE IV—Social Psychology. An examination of the social implications of mental development in the individual and the race. The influence of the social environment upon the development and the organization of native tendencies; the rise of self-consciousness; the evolution of the social consciousness through the application of moral judgment. The psychology of the crowd, of fashion, and of custom. Lectures, text-book, collateral readings. Open to those who have taken Course II.

First term, two hours.

Given in 1918-19.

COURSE V—Ethics. An introductory study of the moral life from the standpoint of its development, theory, and practice. An attempt to lay a rational basis for the moral life in the individual. Lectures, text-book, written exercises, and supplementary readings. Open to those who have taken Course II.

Second term, three hours.

COURSE VI—History of Ancient and Medieval Philosophy. A survey of the development of philosophic thought from Thales to the Renaissance, considered in its relation to the sciences and to religious, social, and political conditions. Special attention is given to Democritus, the Sophists, Plato, and Aristotle, and their influence upon subsequent thought. Open to juniors and seniors.

First term, two hours.

Given in 1917-18.

COURSE VII—History of Modern Philosophy. The growth of philosophic thought from the time of Bacon and Descartes. The relations are exhibited which philosophy has sustained to the development of modern civilization. Lectures, text-book, and assigned readings. Open to juniors and seniors.

Second term, two hours.

Given in 1917-18.

COURSE VIII—Current Philosophical Tendencies. A course designed to acquaint the student with contemporary tendencies in philosophical thought. The standpoints of outstanding present-day philosophers in Europe and America will be discussed. Lectures, collateral readings, and theses. Open to seniors, and to juniors who have had two courses in philosophy.

Second term, two hours.

Given in 1918-19.

COURSE IX—Theism. The true basis of knowledge is inquired into, the traditional arguments for the existence of God are critically examined, and the attempt is made to show that the theistic conception of the world is a necessary postulate of reason and of human life as a whole. Open to all who have taken Bible I, and have taken or are taking Course II.

First term, two hours.

Given in 1917-18.

COURSE X—Philosophy of Religion. The origin and nature of religion; the relation of the philosophy to the history of religion; the trustworthiness of the religious consciousness; the universal element in all religions; the philosophy of primi-

tive beliefs and practices, such as fetichism, magic, and sacrifice; the characteristics which distinguish tribal, national, and universal religions; the causes of variation in religion; the reason why so few religions have been missionary; the relation of religion to secular life, to science and art, to morals and theology; the ultimate value of religion; the religion of the future. Lectures, text-books, theses. Open to those who have taken Bible I, and have taken or are taking Course V.

Second term, two hours.

Given in 1917-18.

COURSE XI—History of Religion. This course will treat of the earlier forms of religious worship, and the origin of the great historic cults. It will give special attention to the tenets of the ethnic religions at the epoch of their highest development, and will trace sympathetically the essential influences of these religions upon national and social life, and specially upon morals and personal religious experience. The relation of Christianity to the cycle of ancient historical religions will be considered. Lectures, text-books, and theses. Open to those who have taken Bible I, and have taken or are taking Course II.

First term, two hours.

Given in 1918-19.

COURSE XII—Philosophic Basis of Christian Fundamentals. After a brief consideration of the nature and value of religion in general, this course will take up the importance of environment upon Christian origins, and the relation of Christianity to the contemporaneous Jewish and Gentile religions, noting essential agreements and differences. This will be followed by an attempt to define the true nature and essence of Christianity, and to state briefly the philosophy of such distinctive Christian doctrines as the incarnation, atonement, miracles, Christian faith, conversion, etc. Christian ideals will be examined in the light of present-day problems of civilization and culture; the question will be raised whether the supremacy and ethical transcendence of Christ do not represent the ultimate ideal of religion, and insure the finality of Christianity. Open to those who have taken Bible I, and have taken or are taking Course V.

Second term, two hours.

Given in 1918-19.

PHYSICS.

This department offers courses which contribute to general culture, and those which give training for technical work. They are presented by means of lectures with experimental demonstrations, combined with recitations and discussion of problems. In addition the student performs experiments in the laboratory for the purpose of obtaining a practical knowledge of the fundamental laws and principles of the science.

COURSE I—College Physics. This course aims to present the fundamental principles of physics, develop its laws and acquaint the student with the relation between energy and matter. These principles and laws are presented in the study of mechanics; and their applications to heat, sound, light, and magnetism and electricity follow. Lectures and recitations three hours a week. Laboratory work two hours.

Throughout the year, four hours.

COURSE II—A Problem Course to supplement Course I. Open only to students who are pursuing Course I.

Throughout the year, one hour.

COURSE III—Elementary Analytic Mechanics. A course which deals with the mathematical side of physics. Special attention is given to the solution of problems in statics, kinematics, and kinetics, and other problems related to technical as well as advanced work in physics. Physics I and Mathematics II are prerequisites.

Throughout the year, two hours.

Given in 1918-19.

COURSE IV—Physical Measurements. A lecture and laboratory course involving the adjustment and use of instruments of precision. The significance and accuracy of results, together with the sources of errors and means of their elimination are carefully discussed. Open to students who have completed Course I.

Throughout the year, three hours.

COURSE V—General Physics. A course in theoretical physics dealing principally with mechanics, heat, the properties of vapor and gases, the theory of solutions, the kinetic theory of gases, thermo-dynamics, magnetism and electricity. Lectures, experimental demonstrations and recitations, two hours a week. Laboratory work four hours a week. Open to students who have completed Course I and Mathematics II.

Throughout the year, four hours.

COURSE VI—History of Physics. Open as a free elective to students who have completed Course I.

Throughout the year, two hours.

Given in 1917-18.

COURSE VII—Electrical Measurements. Lectures and recitations, supplemented by laboratory work in the theory of measurements designed to acquaint the student with the practical methods of measuring electrical quantities. It includes the standard methods of determining resistance, current, E. M. F. capacity, induction, conductivity, etc. One hour lecture and recitation; four hours laboratory. Open to those who have completed Physics I and Mathematics I.

First term, three hours.

COURSE VIII—Direct and Alternating Currents. A study of the production, control, and distribution of the electric current. Special attention is given to the dynamo and motor, not in the sense of an engineering problem of construction, but in their relation to the utilization of electrical energy. The course includes the principles and practice of transformation and conversion of alternating currents. One hour lectures and recitation, four hours laboratory work. Open to students who have completed Physics VII.

Second term, three hours.

OTHER COURSES. For students desiring to specialize in physics, courses dealing with any of the subjects treated under this department will be given as the work is demanded.

POLITICAL SCIENCE.

The sequence of courses in this field is planned so that emphasis is laid upon the functions of national,

state, and local governments in the United States, with the two-fold purpose of preparing men and women for the duties of citizenship, and of familiarizing students with a concrete example of government as a foundation for the more advanced theoretical work in the nature and functions of the state in general. Three courses are devoted to government and modern political problems, while the fourth is devoted to political philosophy.

COURSE I—American Government. This course is divided between a study of the structure and functions of our national and state governments. Throughout the course present-day political problems of national and local interest will be made the subject of discussion in class. Beard's American Government and Politics and Bryce's American Commonwealth furnish an outline of the work.

First term, three hours.

COURSE II—Municipal Government. This course includes an outline of the growth of American municipalities and a study of the organs and functional mechanism of modern cities in the United States and European countries. Emphasis is laid upon the newer tendencies in the progress of municipal government. Munro's The Government of American Cities and The Government of European Cities furnish a basis for the work.

Second term, three hours.

COURSE III—Comparative Government. A study is made of the constitutional structure and organization of the more important governments of Europe. The object is to enable the student to compare these governments with each other and with our own. The course is open only to those who have completed Political Science I and II and History I. Ogg's The Governments of Europe is the text.

First term, two hours.

COURSE IV—Principles of Political Science. This course comprises a study of the origin, nature, and functions of the

state and a critical examination of ancient, medieval, and modern political theories. The requirements for admission into this course are the same as for Course III.

Second term, two hours.

PUBLIC SPEAKING.

The courses in public speaking are designed to train the student in the composition and the delivery of the various forms of public address. So far as possible, the work is adjusted to the particular needs of the individual student.

COURSE I—Written analysis and interpretation of extracts from great orations. Extemporaneous speaking. This course aims to develop directness, earnestness, and dignity in public address. During the first term a careful study is made of the psychological principles which govern effective speaking. Sample speeches are studied and assigned passages are delivered by each student. During the second term the same work is continued but more extemporaneous work is required.

Elective for all who are taking or have completed English I.

Throughout the year, one hour.

COURSE II—Argumentation and Debate. First term. In this term the emphasis is laid upon theory. The principles of analysis, the rules of evidence, the elements of logic, and the kinds of fallacies are discussed. There is also brief-drawing leading up to written and oral debate. Second term. The theory of the subject is concluded; the emphasis, however, is laid upon practice.

Elective for all who have completed Course I.

Throughout the year, one hour.

COURSE III—The Oration. First term. An examination of the principles of the oration as presented in some such book as Shurter's The Rhetoric of Oratory. Collateral readings are assigned. Second term. A number of selected orations will be tested in the light of the princples studied during the first term. Each student will write a brief eulogy and will be given

oral practice in the delivery of several of the forms of speeches.

Elective for all who have completed Course I.

Throughout the year, one hour.

COURSE IV—Practical platform work in the delivery of the colloquial, elevated, and impassioned styles of oratory. Lectures on the philosophy of expression with accompanying studies to be worked out by the pupil in platform presentation. A systematic study of voice culture is begun in this course. The "Natural Tone Drill" is the system used. A study of the principles underlying gesture work is also required.

Elective for all who have completed Course I.

First term, two hours.

COURSE V—The study of voice culture is continued in this course in a more advanced and technical way. Dramatic readings from Shakspere and interpretative studies of the masterpieces of literature will be given each student. Some extemporaneous platform work will also be required.

Elective for all who have completed Course IV.

Second term, two hours.

SPECIAL WORK for the individual pupil will be given in private lessons. A fee of ten dollars for each term hour will be charged.

SPANISH LANGUAGE AND LITERATURE.

This department offers two courses in which a thorough study is made of the grammar and a good reading knowledge is obtained. Concurrent with the present trend of things, considerable attention is given to study of practical Spanish, including familiarization with commercial language. Attention is also given to conversational work.

COURSE I—Elementary Spanish. DeVitis' Spanish Grammar, with abundant oral and written exercises. Reading of such easy Spanish as Alarcon, El Capitán Veneno; Galdos, Dona Perfecta.

Throughout the year, three hours.

COURSE III—A study of modern Spanish novels and dramas. Composition work is continued with some such text as Waxman, A Trip to South America.

Throughout the year, two hours.

SURVEYING AND GRAPHICS.

The courses in surveying and graphics are based largely on the needs of the civil engineer and draughtsman. The work is scientific and yet thoroughly practical in its scope and methods. While these courses are provided for students taking B. S. Group IV, they are open as electives to all students.

COURSE I—Descriptive Geometry and Elementary Mechanical Drawing. The problems are those relating to the point, line, and plane, the representation of surfaces, their intersection and development. This course includes instruction in the use and care of instruments and simple drawing in orthographic, isometric and cabinet projections.

Throughout the year, three hours.

COURSE II—Plane Surveying. This course consists of a series of lectures, supplemented by exercises in the field. The student is taught the use of the chain, tape, compass, transit and level. The work in the drawing room consists of the computations incident to the work of the surveyor and in plotting from notes taken in the field. Open to students who have completed Mathematics I.

First term, three hours.

COURSE III—Railway Surveying. This course consists of a study of railway curves and earthwork. The field work includes a reconnaissance, the preliminary and location surveys, and the necessary computations and maps. Open to students who have completed Course II.

Second term, three hours.

COURSE IV—Mechanical Drawing. This course includes plotting, tracing, the making of blue prints, detail and dimension drawing from sketches, models, and from other drawings

with a different scale. Open to students who have completed or are taking Course I.

Throughout the year, three hours.

COURSE V—Applied Mechanics. This course includes a study of the strength and elasticity of beams and columns, with the application of the principles of mechanics; in the first term to structures of steel and timber, and in the second term to structures of re-inforced concrete. Open to students who have completed Mathematics II and Physics I.

Throughout the year, three hours.

COURSE VI—Structural Mechanics. This course includes a study of strains and stresses with the application of the principles of mechanics to the design of roof and bridge trusses, and the determination of the dimensions and details of the same. Design of a simple bridge with working drawings. Open to students who have completed or are taking Course V.

Throughout the year, four hours.

PHYSICAL TRAINING.

For Young Men.—The object of this department is to give the student growth and increase of strength; to promote health and symmetrical development. These objects are accomplished by regular class exercises in the gymnasium during the fall and winter, on the field in the spring, and by periods of optional work after class hours. Physical measurements and strength tests of all students are taken upon entrance and at the close of the college course and also at such other times as seem necessary. These form the basis of comparison of the students' conditions and needs, and determine the character and amount of exercise necessary to overcome marked deficiencies, irregular development, or such deformities as are amenable to physical exercise.

Students will receive personal advice with reference to habits of life, exercise, study, and recreation, as well as suggestions pertaining to personal hygiene.

Regular exercise, consisting of Swedish work, military gymnastics, Indian club, wand, and dumb-bell drills, principles of heavy gynmastics, is required of the men of the sophomore and freshman classes, three hours a week, from the middle of October to the middle of May. Elective work is offered the junior and senior classes.

For Young Women.—The aim of the work is to acquire a symmetrical development of the body as a basis for health and grace. The training is based on Delsarte Philosophy of Expression, and the Swedish and German systems of free movements and light gymnastics. All young women are required to take the prescribed work unless excused on recommendation of the instructor.

The general work includes Indian club and dumb-bell exercises, flexing exercises to overcome stiffness, exercise to develop control of the muscles, and all devices in training that secure freedom of bodily action.

The Gymnasium for Women is equipped with the most modern apparatus. In addition to the regular class exercises opportunity is offered to do individual work under the direction of the instructor. In the basement of Hulings Hall there is a bowling alley for the exclusive use of young women.

REQUIRED WORK.

For graduation in any Group, all work specified as required must be completed, and additional subjects selected from the general list of electives sufficient to make a total of not less than one hundred twenty term hours. "Term hour" signifies one hour recitation weekly for one term of eighteen weeks. The prescribed work in physical training must also be completed. In the senior year a thesis and an oration are required. But in the Groups leading to the B. S. degree two theses or a thesis and an oration may be presented.

Sixteen recitations weekly is the regular number, but the Registrar may assign seventeen. No student may take more than seventeen or less than twelve hours' work without the approval of the Registration Committee. In no case will additional hours be allowed except on the basis of previous high grade work.

LIST OF ELECTIVES.

The following list of elective studies includes all subjects that are elective in any of the Groups. Some of the subjects are required in one or more of the Groups, but are elective in others. The list is open to all students under the conditions named below.

1. The student must be fully prepared for the work.

2. He must avoid all conflicts in hours.

3. So far as possible all required work below his rank and Group Electives must be completed before advanced electives are chosen. This rule may be waived in cases where it is necessary in order that the student may be ready for a particular line of work in the latter part of his course.

4. A study once elected must be pursued to the end of the year or to the completion of the subject. No credit for graduation will be given for partial courses unless by arrangement made with the instructor and the Registrar before the study is begun.

5. The student's choice of elective work must exhibit a definite and coherent plan.

6. The faculty reserves the right to disapprove choice of electives.

The Arabic numerals refer to the number of hour recitations weekly; the Roman numerals refer to the detailed description of the course of instruction found on pages 52 to 95.

	First Term.	Second Term.
Astronomy I	3	3
Astronomy II	..	2
Astronomy III	..	2

	First Term.	Second Term.
Astronomy IV	4	4
Biology I	4	4
Biology II	1	1
Biology III	4	4
Biology IV	4	4
Biology V	3	..
Biology VI	..	3
Biology VII	3	3
Biology VIII	..	3
Biology IX	4	..
Biology X	..	4
Biology XI	1	1
Biology XII	2	2
Chemistry I	4	4
Chemistry II	3	3
Chemistry III	4	4
Chemistry IV	2	2
Chemistry V	3	3
Chemistry VI	3	3
Chemistry VII	3	3
Chemistry VIII	4	4
Chemistry IX	3	3
Chemistry X	2	2
Chemistry XI	3	3
Economics I, II	3	3
Economics III, IV	2	2
Economics V, VI	2	2
Education I	3	..
Education II	..	3
Education III	..	3
English II	2	2
English III	3	3
English IV	3	3
English V, VI	2	2
English VII, VIII	2	2
English IX, X	3	3
English XI, XII	3	3
English Bible II	3	3
English Bible III	3	3

	First Term.	Second Term.
English Bible IV, V	3	3
English Bible VI, VII	3	3
French I	4	4
French II	4	4
French III	3	3
French IV	3	3
French V	3	3
French VI	3	3
French VII	1	1
Geology I	4	4
Geology II	3	..
Geology III	..	3
Geology IV	3	..
Geology V	..	3
German I	4	4
German II	4	4
German III	3	3
German IV	3	3
German V	1	1
German VI	3	3
German VII	3	3
German VIII	2	2
German IX, X	2	2
German XI	3	3
Greek I	4	4
Greek II	3	3
Greek III	3	3
Greek IV	3	3
Greek V	2	2
Greek VI	4	4
Greek VII	2	2
Greek VIII	2	2
Greek IX	2	2
History I	3	3
History II	3	3
History III	3	3
History IV	2	2
History V	2	2
Italian I	3	3

	First Term.	Second Term.
Italian II	2	2
Latin I	4	4
Latin II	3	3
Latin III	3	3
Latin IV	2	2
Latin V	2	2
Latin VI	2	2
Mathematics I	4	4
Mathematics I A	4	4
Mathematics II	4	4
Mathematics II A	3	3
Mathematics III	3	..
Mathematics IV	..	3
Mathematics V	3	3
Mathematics VI	2	2
Philosophy I	..	3
Philosophy III	2	2
Philosophy IV	2	..
Philosophy VI, VII	2	2
Philosophy VIII	..	2
Philosophy IX, X	2	2
Philosophy XI, XII	2	2
Physics I	4	4
Physics II	1	1
Physics III	2	2
Physics IV	3	3
Physics V	4	4
Physics VI	2	2
Physics VII	3	..
Physics VIII	..	3
Political Science I, II	3	3
Political Science III, IV	2	2
Public Speaking I	1	1
Public Speaking II	1	1
Public Speaking III	1	1
Public Speaking IV, V	2	2
Spanish I	3	3
Spanish II	2	2
Surveying and Graphics I	3	3

	First Term.	Second Term.
Surveying and Graphics II, III	3	3
Surveying and Graphics IV	3	3
Surveying and Graphics V	3	3
Surveying and Graphics VI	4	4

GENERAL INFORMATION.

COLLEGE FEES.

All students pay a fee of $125 a year, $65 payable at the opening of the first term and $60 at the opening of the second. This includes incidental, library, and gymnasium fees.

In the laboratories the following fees are charged each term:

Astronomy I, II	$ 2.00
Astronomy IV	7.50
Biology I	2.00
Biology III and IV	4.00
Biology V and VI	3.00
Biology VII, IX, and X	7.50
Biology VIII	5.00
Chemistry I	4.00
Chemistry II, III, VI, VII, VIII	7.50
Chemistry IV, IX	5.00
Geology I, II, V	2.00
Geology IV	6.00
Physics I	3.00
Physics IV, V	5.00
Surveying I	2.00
Surveying II, III, IV	3.00

In addition, breakage of material is charged at actual cost.

All college fees are due on the day of registration.

No student is admitted to class until all fees are paid or satisfactorily arranged for. No fees are returned except in case of sickness.

LIVING EXPENSES FOR YOUNG MEN.

The young men of the college board in Cochran Hall, in fraternity chapter houses, or in private families. The cost of board in Cochran Hall is $135.00 a year. The cost in chapter houses and private families is, as a rule, ten to twenty-five per cent. more. One half the room rent in Cochran Hall is due and payable at the opening of the first term and one half at the opening of the second term. A deposit fee of ten dollars is required when the room is reserved. This fee will be deducted from the second half year's payment. The rate for rooms varies from forty to eighty dollars a year for each student. All rooms are to be surrendered not later than noon on Monday of Commencement Week. The amount for board in Cochran Hall is due as follows: $35.00 at the opening of the year; $35.00 on the second Monday in November; $35.00 at the opening of the second term; $30.00 on the third Monday in April. If the student has a roommate, the necessary expenses for a year will fall within the following estimates:

	Low.	Liberal.
Term and laboratory fees	$125.00	$165.00
Room rent, fuel, light	40.00	80.00
Table board	135.00	160.00
Books	15.00	40.00
Total	$315.00	$445.00

Expenses other than those enumerated depend largely upon the student's tastes and habits, and the college does not undertake to estimate them. For the items mentioned the figures given are exact. Few students will have occasion for spending more. This,

of course, does not include traveling or personal expenses. An economical student can live on $390 a year.

A circular detailing the expense of living in Cochran Hall will be sent on request.

YOUNG WOMEN.

Allegheny College is a co-educational institution. It endeavors to give young women the highest educational advantages open to young men. Instruction is given in the same subjects and by the same professors; and young women have access to all departments of the college, and are eligible to all honors. For students desiring to combine music with college work, opportunity for excellent instruction is afforded in the Pennsylvania College of Music.

Hulings Hall. Young women not living at home or with relatives are required to live in Hulings Hall. The constant aim is to furnish here an ideal college home for young women, where they shall be surrounded with influences which promote true and cultured womanhood. The hall is under the charge of the Dean of Women, whose influence, with that of her competent assistants, is constantly felt in the social, moral, and religious development of the young women under her care.

For the proper maintenance of the hall as a college home for young women certain specific rules are essential, but it is the policy of the college to make only such regulations as will best protect the interests of those who reside there.

The rules governing the conduct of the young

women of Hulings Hall were carefully drawn up by the administration of the college and the Dean of Women, and by action of the faculty entrusted to the Student Government Association of the hall, which assumes the responsibility for the observance of all rules and regulations. Thus under the guidance of the Dean of Women and the executive board of the Association, the young women of the hall are given individual and community responsibility for their conduct in college life. A copy of the regulations for the government of the hall will be sent on request.

The residents of the dormitory maintain in the building the services of a resident trained nurse. This valuable addition to the hall life has been justified by the better conditions for health and comfort afforded the young women. For this purpose an assessment of a five dollar house fee is made payable at the beginning of the year.

The rooms are furnished with single beds, mattresses, pillows, chairs, and tables. Each resident supplies the following articles: sheets, pillow-cases, bed covering, towels, and napkins.

The rates by the year, including board, room, heat and light, are $225.00 for each student. The rooms are all double, so that two students occupy each room. In case a student desires to room alone, there is an additional charge of $50.00. Bills are payable in four installments as follows: $70.00 at the opening of the year, $55.00 the second Monday in November, $55.00 at the opening of the second term, and $45.00 the third Monday in April. A deposit fee of $10.00 is required when a room is reserved. This fee is credited on the last payment of the year.

AID TO STUDENTS.

Self-Help.—Young men help themselves in several ways. A considerable number of the present students are earning their expenses in whole or in part. Some are employed in light work connected with the college or the boarding clubs. Some find in town opportunities for work of various kinds. A few are serving churches in the neighborhood of Meadville. It is the policy of the college to help students that help themselves.

The Lindley Endowment.—By the will of the late Miss Lucy Lindley, of Meadville, the college received the sum of ten thousand dollars, the interest of which is used to assist students dependent upon their own efforts to obtain an education. Application for aid from this fund should be made to the President. It should be remembered, however, that only a limited number of students can be aided in this way.

The Ballantyne Scholarship Fund.—In 1904 Mrs. Hettie F. Ballantyne, of Pittsburgh, gave to the college thirty thousand dollars in memory of her husband, James Alexander Ballantyne; the fund is known as the James Alexander Ballantyne Scholarship Fund. The income is used to pay the college term fees, and in cases of need, certain other expenses, of the sons and daughters of ministers of the Pittsburgh Conference, and of young men from within the bounds of that conference who are studying for the ministry. This fund is administered by the officers of the college faculty on recommendation of a committee of the Pittsburgh Conference.

The George W. Wright Scholarship Fund.—This is

a gift of $1,000 from the Honorable George W. Wright of Mercer, Pa., a former student of Allegheny College. The proceeds of this fund is to constitute a scholarship to be awarded each year on the nomination of Mr. Wright's representative.

High School Scholarships.—The Board of Trustees has established prize scholarships of fifty dollars each, to be awarded each year to honor students in the best high schools in the patronizing territory of the college. In case the graduating class numbers ten or less, the scholarship must go to the one having maintained the highest scholastic rank during his high school course. If the class numbers more than ten, and less than twenty-five it may go to the first or second in rank, and if there are over twenty-five in the class the scholarship may go to any one of the highest three. The amount of the scholarship is to be applied on the fees of the freshman year.

Educational Society Loans.—Students who are members of the Methodist Church, showing promise of usefulness in any form of Christian activity, may secure loans from the Educational Society. These loans are without interest and need not be paid in full until five years after graduation. These loans are offered not only to candidates for the ministry, but also to all needy and worthy students who show promise of useful service in lines of Christian activity and are endorsed by the home Quarterly Conference. The loans are made by the Society on the recommendation of the faculty.

No aid from the above mentioned funds, or from any other source, is given to students who use tobacco.

A student having received aid from any of the college funds will be given a letter of dismissal to enter another college only after all such aid shall have been returned.

RELIGIOUS CULTURE.

The college was founded by Christian men for the promotion of Christian culture. It believes that education should always include, as its highest aim, the development of Christian character. It seeks to make the moral and religious life of the college community such that the student will be under as helpful influences as he would be in his own Christian home.

Chapel services are held each morning and all students are required to be present. Regular attendance on Sunday mornings at some church, selected by the student, or his parents, is also expected. Prayer meetings are held Wednesday evening of each week. The results are manifest in the quickening and strengthening of many in the religious life.

The Young Men's Christian Association and the Young Women's Christian Association are active and efficient organizations. Bible study classes and a mission study class are well attended.

The religious influence of the college is not in any sense sectarian, but Christian. On the rolls this year are representatives from seventeen Christian denominations.

THE ADVISER SYSTEM.

Each student on entering chooses some member of the faculty, who serves throughout the freshman year as a special counsellor on all matters in which the stu-

dent finds the need of frank and friendly advice. The relation between adviser and student is intended to be perfectly fraternal, without restraint on either side. At the beginning of the sophomore year the professor under whom the student does his major work becomes his adviser for the remainder of his course.

HONOR SYSTEM.

All college examinations and quizzes are conducted under an honor system, by which the presence of instructors in the room is dispensed with, and the student is placed on his honor. The following signed declaration is required to make the examination valid: **"I hereby declare on my honor that I have neither given nor received aid in this examination."**

All cases of suspected fraud are dealt with by the Student-Honor Committee, who are authorized to decide on the question of guilt and to recommend to the faculty the penalty of dismissal from college in the case of a senior, junior, or sophomore, and, in the case of a second offense, a freshman.

CLUBS.

The Classical Club, composed of the instructors in the classical departments and about twenty-five advanced students, meets for the review of new books and current literature, and for the reading and free discussion of papers submitted by members on lines of classical investigation.

The Quill Club represents the journalistic and literary interests of the college. Its aim is to encourage press correspondents, to co-operate intelligently with the editors of the college publications, and to foster

original and creative literary effort. It meets monthly. The membership is limited to thirty.

The German Club is an organization for students under the leadership of the professor of German that meets fortnightly for the purpose of arousing and sustaining interest in the German language as a vehicle of oral expression and of studying German life, institutions, and politics. Membership is open to all students who have had one or more years of regular class-room work in German.

The Philo-Franklin Forum is a society organized on the plan of a national deliberative body. At its weekly meetings various public and college problems are discussed, and parliamentary drill is afforded. Its membership consists of students who are especially interested in debate, under the guidance of representatives of the departments of English and Public Speaking.

Le Petit Salon meets fortnightly for the purpose of French conversation and study of French art, literature, etc. Its alternate sessions are in conjunction with the Meadville branch of the Alliance Francaise, an international organization. The membership is limited to thirty and includes the instructors and advanced students in French.

The Modern Problems Club, under the head of the History department, meets monthly for the discussion of current social, economic and political problems. This club, which is a branch of the Intercollegiate Civic League, is limited to juniors and seniors.

The Tingley Biological Club, composed of instructors and advanced students in the Biology department,

meets fortnightly for the presentation and discussion of papers by the various members; each member presents two papers a year dealing with some phases of biological research.

The Thoburn Club is an organization composed of such men of the college as are fitting themselves for the ministry, for missionary, Y. M. C. A., or any other public religious work. It brings to the college each year a number of lecturers on such subjects as would naturally appeal to the membership and holds monthly meetings for social intercourse, intellectual debate and religious stimulus. It is in close alliance with the Thoburn Chair of English Bible and Philosophy of Religion. For many years it has been one of the best known religious forces in the college.

PRIZES.

Four prizes are open to competition by students of the college classes.

The Wakefield Oration Prize.—Mr. James A. Wakefield, of Pittsburgh, furnishes a prize of fifty dollars in the name of his grandfather, the Rev. Samuel Wakefield, D.D., awarded in February of each year, to the young man delivering the best oration. The winner of this prize represents the college in the Intercollegiate Civic Oratorical League Contest held in May.

The Philo-Franklin Oration Prize.—The old Philo-Franklin Literary Society has provided a permanent endowment fund of six hundred dollars for prizes in oratory. The income will provide a first and second prize. The contest is open only to members of the Philo-Franklin Forum.

Heckel Prizes in Science.—Two prizes, a first prize of thirty-five dollars and a second prize of fifteen dollars, are given each year by Dr. Edward B. Heckel, of Pittsburgh. These prizes are awarded for the best two theses written by graduate or undergraduate students upon scientific subjects. The theses are presented on the first day of May and the prizes awarded the following Commencement Day.

Ballinger and Siggins Prize.—A prize of twenty-five dollars is offered by Ballinger and Siggins of Meadville, to be given each year to that member of the senior class who has shown unusual excellence in chemistry, under terms agreed upon by the donors and the head of the Department of Chemistry.

ATHLETICS.

Outdoor exercise and athletic sports under the direction of competent supervisors are fostered as helpful in complete physical training, but are made consistently secondary to scholastic work. No student may take part in athletic events without the consent of the physical director after a physical examination. The athletic interests of the college are in the hands of the Athletic Association, to which all members of the college are eligible, and the business is managed and all funds administered by an Athletic Advisory Board, composed of four members of the faculty and five students. By an arrangement voluntarily entered into by the students, all young men pay $5.00 and all young women $3.00 for the support of athletics. For this they receive season tickets to all games. All details of athletic contests must receive the sanction of the Athletic Board, and every precaution is taken to

insure clean athletics. Players must be *bona fide* students taking not less than twelve hours work, must have been registered at the opening of the year in which they compete, may not have more than one condition in any preceding work or be delinquent in the current term's work, and may not receive remuneration, directly or indirectly, for their services. The college is a member of the National Collegiate Athletic Association and conforms to the minimum eligibility requirements of that organization. Competent coaches are provided.

DEGREES.

The degree of Bachelor of Arts is conferred upon those who complete in a satisfactory manner, the requirements under any one of the A. B. Groups I-V. The degree of Bachelor of Science is conferred upon those who complete in a satisfactory manner any one of the Science Groups.

Bachelors of Arts of this college may pursue, in residence, work in not more than two distinct lines of study; and on the completion of a full year's work, including a satisfactory thesis, receive the degree of Master of Arts.

The Degree of Master of Science is conferred on Bachelors of Science on the same conditions as the degree of Master of Arts is conferred upon Bachelors of Arts.

Every person receiving a degree from the college pays a diploma fee of five dollars.

REGISTER OF STUDENTS.

GRADUATE STUDENTS.

Aey, Charles Arthur.....New Castle
B. S., Allegheny College, 1916—Physics.

Amon, Fred Hugh..... Greenville
B. S., Allegheny College, 1916—Chemistry.

Cares, Charles William..... Meadville
B. S., Allegheny College, 1914—Chemistry.

Gilbert, Carl A..... Scottdale
B. S., Allegheny College, 1915—Chemistry.

Megirt, Margaret Ellen..... Meadville
A. B., Allegheny College, 1912—Economics.

Ritchie, LaMarr ..... Indiana
B. S., Allegheny College, 1916—Chemistry.

Seniors.

Acker, Lewis Franklin, Jr. ..... Meadville
Askey, Edwin Vincent ..... Bellingham, Wash.
Baird, Olga Gwendolyn ..... Meadville
Baker, Edison Howard ..... Greenville
Bourquin, Josephine ..... Conneaut, O.
Boyd, Nelson Henry ..... Sharon
Brooke, Julia ..... Uniontown
Brownell, William Arthur ..... Smethport
Campbell, Charlotta Marie ..... Meadville
Carew, Mary Katherine ..... Erie
Chase, Elizabeth ..... Greenville
Clendenien, Miller Bartley ..... Tarentum
Clendenin, Mary Adelaide ..... Meadville
Clough, Veleda Louise ..... Corry
Craig, George Smith ..... Mercer
Curtis, Chalmer Clinton ..... Knox
Davison, Helen Miles ..... Oil City

DeLand, Ruth Elizabeth ..... Sheridan, N. Y.
Dewey, Ralph Smith ..... Ripley, N. Y.
Doane, Foster Baird ..... Butler
Drake, Lowell Claudius ..... Ashtabula, O.
Ellis, Murray Henry ..... Meadville
Fetzer, Lilian Marie ..... Meadville
Flahavan, Mary Ruth ..... Bemus Point, N. Y.
Frishkorn, Mark Wright ..... New Castle
Hanks, E. Gertrude ..... Meadville
Hazen, Mildred Lucile ..... Titusville
Hendershot, Elizabeth Frazer ..... Meadville
Hill, Paul Emerson ..... Emlenton
Hodgkinson, Cecil H. ..... Meadville
Hughes, Arthur Fitzgerald ..... Union City
Johnson, Hildur Eugenia ..... Titusville
Jones, Harry Albert ..... Meadville
Kahle, Carmen ..... Oil City
Kahle, Harold Bruce ..... Parnassus
Kelley, Ethyl Marie ..... Butler
Kulp, Helen Marie ..... West Middlesex
Lackey, Ira Cuttler ..... Stoneboro
Longanecker, Don Cameron ..... Khedive
McConnell, William Ethelbert ..... Parnassus
McKinney, Clarence Eugene ..... Meadville
Maxwell, Rachel Amanda ..... Meadville
Miller, Charles Miner, Jr. ..... Pittsburgh
Monroe, Grace ..... Meadville
Monroe, Lowell White ..... Meadville
Moore, Robert Law ..... Meadville
Mumford, Graydon William ..... Beaver Falls
Nebinger, Martha Kirk ..... Homestead
Neill, James Maffett ..... Clarion
Pappenhagen, Albert Burnell ..... Meadville
Peckham, Harold Dexter ..... Wickford, R. I.
Pitt, Ruth Elnora ..... Ripley, N. Y.
Powell, Fred ..... Kittanning
Preston, Bessie Cecilia ..... Monessen
Reider, Kenneth ..... New Castle
Richey, Mildred Irene ..... Vandergrift
Richey, William Clyde ..... Titusville

Robinson, Agnes Cannon ..... Uniontown
Scott, Genevieve Annette ..... Corry
Scott, John Bell ..... Lynchburg, Va.
Shenefelt, Arthur Merle ..... Pitcairn
Shryock, Merwin ..... Meadville
Smith, Agnes Elizabeth ..... Meadville
Smith, Robert Gittens ..... Barbados, West Indies
Stolz, Pauline Gray ..... Meadville
Stone, Esther Alice ..... Butler
Strong, Leonell J. ..... Warren
Stroup, Gale French ..... Braddock
Swoap, Lewis Milton ..... Barnes
Sykes, Elizabeth Ritter ..... Franklin
Tarr, Jesse ..... Wellsville, O.
Thomas, Dale Edmund..... Dorset, O.
Tuttle, Robert J. ..... Cattaraugus, N. Y.
Van Hoesen, Agnes Laidlaw ..... Meadville
Wagner, Charles Conroy ..... Barnes
Warner, Helen Louise ..... Meadville
Weaver, John Carson ..... Turtle Creek
Weide, Ralph Lafayette ..... New Castle
White, Anderson McLean ..... Erie
Wilber, Albert Bennett ..... Cambridge Springs
Wolf, Paul Burton ..... Connellsville
Yost, Robert ..... South Fork
Zuver, Dudley DeForest ..... Greenville

Seniors, 83.

Juniors.

Bianchi, Humbert ..... Ambridge
Bosworth, Howard Wilson ..... Corry
Brooke, Grace Loar ..... Uniontown
Brown, Mark Clemant ..... Pleasantville
Brumbaugh, Ruth ..... Franklin
Castle, Homer Levi, Jr. ..... Pittsburgh
Castle, John Granville ..... Pittsburgh
Catherman, Raymond Fowler ..... Meadville
Chao, Shih-fu ..... Woosung, China
Cline, Byron Vito Travis ..... Apollo
Copeland, Maude Elizabeth ..... Meadville
Coulsan, Harry Edward ..... Mars
Deens, Louise Ferguson ..... Beaver
Dowdell, Olive Sergeant ..... Beaver
Downing, Helen Louise ..... Meadville
Easterwood, Helen Cullum ..... Meadville
Elder, Myrtle Nina ..... Saybrook
Emery, Esther Louise ..... Mercer
English, Eva Janette ..... New Castle
Engstrom, Gustav Evan ..... Kane
Fogo, Helen Pauline ..... Wellsville, O.
Freer, Isabel ..... Marion, O.
Gartner, Annetta ..... Meadville
Graham, Ralph Edmundson ..... Pittsburgh
Hammerton, Ruth Florence ..... Meadville
Hartung, George Michael, Jr. ..... Evans City
Hollingshead, Paul Edward ..... Gustavus, O.
House, Lillian Estelle ..... Conneaut, O.
Hulin, William Whann ..... Franklin
Isherwood, James Ernest ..... Canonsburg
Kelley, Ernest Jasper, Jr. ..... Chandler's Valley
Kelley, Malcolm Francis ..... Meadville
Lackey, Scott Richard ..... Stoneboro
Lane, Paul Warren ..... Turtle Creek
Linn, Hazel Bell ..... Espyville Station
McCloskey, Rodney Smith ..... Meadville
McConnell, Anna McCullough ..... Parnassus
McCreary, Robert Emmett ..... Monaca
McLain, Helen Elizabeth ..... Belle Vernon

Megahan, Donald Bruce ..... Wilkinsburg
Miller, Marion Frances ..... Butler
Mondereau, Pearl ..... Meadville
Nichols, Dorothy Winslow ..... Meadville
Ogden, Jesse Switzer ..... Rochester, N. Y.
Olson, Lena Marie ..... Knox
Pollard, William Michael ..... Saegertown
Pond, Frederick Logan ..... Meadville
Reamer, Ronald ..... Monessen
Regester, John Dickinson ..... New Castle
Rhoads, Christine Pauline ..... Butler
Robinson, William Jabez ..... Uniontown
Saxton, Norene Roberta ..... Jamestown, N. Y.
Scannell, Martin James ..... Athens
Shorts, Hallie Daniel ..... Saegertown
Simcox, Janet Haxton ..... Sandy Lake
Simpson, Gertrude Alice ..... New Brighton
Singley, Adelaide ..... Meadville
Smith, Harold Leroy ..... Meadville
Stearns, Paul ..... Meadville
Swaney, Mary Agnes ..... Springboro
Ware, Ralph Hartman ..... Greenville
Wiley, John Lynn ..... Greenville
Wiltsie, Harold Martin ..... Ashville, N. Y.
Wissinger, Harry Lawrence ..... Pitcairn
Wood, Irene Permilla ..... Pittsburgh
Woodard, Kersey Mendenhall ..... Linesville

Juniors, 66.

Sophomores.

Abrams, Helen Ruth ..... Jamestown, N. Y.
Arnold, Mary Kathryn ..... Clarion
Averill, Esther ..... Pittsfield
Baer, Harold Kenneth ..... New Castle
Baker, Dorothy ..... Pittsburgh
Baker, Mary Josephine ..... Jamestown, N. Y.
Baldwin, Joseph Silliman ..... Washington, D. C.
Barcus, William Dickson ..... Pittsburgh
Barr, Glenn Ross ..... Marienville
Beatty, Othello Ziegler ..... Butler
Bernard, Joseph ..... United
Blair, Adda Caroline ..... Tiona
Bolard, Frederick Cowen ..... Cambridge Springs
Brooks, Leda Sussanna ..... Geneva
Brownell, Robert Foote ..... Smethport
Chapin, Margaret Oakes ..... Union City
Clother, Wells McDermott ..... Painesville, O.
Clouse, Mary Musette ..... Geneva
Cribbs, Hyatt M., Jr. ..... Verona
Curry, Ethel Virginia ..... Meadville
Deutsch, Arthur Watson ..... Meadville
Dickey, Howard Carlysle ..... Oil City
Douds, Gladys May ..... Alleghany, N. Y.
Eberlee, Stanley Lee ..... Cattaraugus, N. Y.
Edwards, Cecil Asenath ..... Oil City
Eiler, Helen Adelaide ..... Meadville
Ellis, Ruth Moore ..... Meadville
Falkinburg, Rae Edgar ..... Meadville
Faulkner, Robert Lee ..... Wattsburg
Filer, Enoch Crawford ..... Greenville
Fithian, Ruth ..... Butler
Fowler, Richard ..... Stoneboro
Francis, Elizabeth Marie Louise ..... Columbus
Gates, Claire E. ..... Oil City
Goslin, Nelson Samuel ..... Arnold
Hall, Earl Dewey ..... Meadville
Hamilton, Mary Eleanor ..... Butler
Harbaugh, John Williams ..... Victoria
Hart, Alvie Emerson ..... Blairsville

Hart, Raymond Lawrence ..... Saltsburg
Hauch, Henry Gregory ..... Meadville
Heckman, Edward ..... Meadville
Hetner, Fred Fridell ..... Greensburg
Hirst, George Edward ..... Dubois
Hodgkinson, Aileen Hayes ..... Meadville
Horth, Inda Arlean ..... Meadville
Horth, Pearl Helen ..... Meadville
Houghton, Margaret Martha ..... Barnes
Howell, Robert Pawling ..... Buffalo, N. Y.
Jelbart, James Fred ..... Meadville
Johnson, Vesta Irene ..... Meadville
Judd, Cleaveland Chester ..... Meadville
Kelly, Mary Agnes ..... Meadville
Kirkpatrick, Francis Earl ..... Butler
Laffer, Frederick Sackett ..... Meadville
Lavely, Herbert Alfred ..... Meadville
Lewis, Virginia Whitney ..... Johnstown
Leyda, Henrietta Elizabeth ..... Oil City
Linn, Alice Winnifred ..... Clemons, Ia.
Longanecker, Judson D. ..... Khedive
McCabe, Edna Carr ..... New Kensington
McCurdy, Harold Adams ..... Mercer
McEntarfer, Clifford Abraham ..... Union City
McKay, Winfield Rose ..... Meadville
McKinney, Arthur Wesley ..... Corry
Mansell, Thomas Dwight ..... Upper Middletown
Martin, John Owen ..... Charleroi
Mead, Charles Alexander ..... Wilkinsburg
Megirt, James Goodrich ..... Union City
Miller, Ruth Pauline ..... Meadville
Monroe, Gertrude Elnora ..... Corry
Monroe, Hanson Hill ..... Painesville, O.
More, Hattie Susan ..... Youngsville
Morrow, Frank William ..... Union City
Muckinhoupt, Harry Bryan ..... Meadville
Mumaw, Martha Ruth ..... Scottdale
Munhall, Helen ..... Meadville
Myers, Fred Earl ..... Apollo
Neal, Meredyth ..... Union City

Norton, Grant Smith ..... Sherman, N. Y.
Patterson, Gordon Derby ..... Meadville
Phillips, Russell Adam ..... Cleveland, O.
Phillips, Anita ..... Meadville
Piper, Charles Edward ..... Derry
Reniers, Nellie Kinkead ..... Pittsburgh
Rhodes, Marjorie ..... New Castle
Richard, Ida Lucile ..... Meadville
Richmond, Charles Francis ..... Pittsburgh
Rishell, Madeleine Louise ..... Johnstown
Root, Louise Adaline ..... Cambridge Springs
Roudebush, Marjorie Eloise ..... Meadville
Rusterholtz, Jerome Bennett ..... McKean
Salchow, Serena ..... North East
Salguero, Mercedes Maria ..... Mayaguez, Porto Rico
Sheldon, Ralph Vail ..... North Girard
Smith, Clyde James ..... Uniontown
Spangle, Charles William ..... Dunkirk, N. Y.
Spieth, William Gladstone ..... Pittsburgh
Stetson, George Arthur ..... Cambridge Springs
Stewart, F. Leslie ..... Franklin
Stockdale, Doris Marjorie ..... Stockdale
Strickland, Helen Jeannette ..... Cattaraugus, N. Y.
Thoburn, Crawford Bennett ..... Meadville
Trace, Fred Birch ..... Meadville
Trumpeter, John H. ..... Monaca
Volk, John P. ..... McKeesport
Walker, Charles Lenwood ..... Mt. Pleasant
Walker, Herbert Elmer ..... Franklin
Weissenborn, Stanton Martin ..... Jersey City, N. J.
White, Marian ..... Kittanning
Widdowson, Olevia Rebecca ..... Mahaffey
Wilson, James Robert ..... Silver Creek, N. Y.
Zehrung, Winfield Scott ..... Meadville

Sophomores, 113.

Freshmen.

Allgood, Ella Maxine ..... Tionesta
Apgar, William Andrew ..... Clearfield
Armagost, Leo Arnold ..... Venango
Baker, Maude Carmeleta ..... Ruffsdale
Baron, William Edward ..... McKean
Benson, Gilbert ..... Falconer, N. Y.
Bollinger, Giles Mallalieu ..... Somerset
Booth, Edwin Prince ..... Charleroi
Bourquin, Warren Ducray ..... Meadville
Brown, Durward Belmont .....Wheeling, W. Va.
Buckner, Laurence Oliphant ..... Brocton, N. Y.
Burns, Laurence Donald ..... Cochranton
Burns, Troy Campbell ..... North Washington
Burwell, Elizabeth Clark ..... Meadville
Campbell, Loudon Lee ..... Wilkinsburg
Carew, Elizabeth ..... Erie
Carroll, Kathryn ..... Meadville
Clothier, Reverdy Mead ..... Silver Creek, N. Y.
Clough, Lyle Alton ..... Corry
Collins, Alton Laffey ..... Kellettville
Cook, Mack Dickson ..... Ashtabula, O.
Cook, Marion Barker ..... Warren
Cook, Perry Davis ..... Ashtabula, O.
Coulter, Samuel A. ..... Vandergrift
Cribbs, Merrill Whitmoore ..... Verona
Cunningham, Ray George ..... Cattaraugus, N. Y.
Davis, Helen Marie ..... Woodlawn
Davis, Ira Kline ..... Braddock
Diefenderfer, Florence Marguerite ..... Conneaut, O.
Dickey, Harold Westlake ..... Oil City
Dunn, David Compton, Jr. ..... Meadville
Dunn, Harriet May ..... Connellsville
English, Floyd Wilbur ..... DuBois
Evans, Dorothy Magdalene ..... Erie
Fickes, Mary Alice ..... Avonmore
Freer, Jean ..... Marion, O.
Gamble, Doris Ray ..... Warren
Gaut, Clarence Dewey ..... Meadville
Gibbons, Florence ..... Sharon

Goldman, Max Robert ..... Pittsburgh
Gordon, Wendell Brown ..... Pittsburgh
Green, Ellen Frances ..... Conneaut, O.
Hager, Alice Mae ..... Uniontown
Haine, Harold Huntley ..... Warren, O.
Hall, Helen Dorcas ..... Warren
Harbaugh, Leonard Earl ..... Victoria
Harkness, Marian Edythe ..... Meadville
Hays, William Vincent ..... Oil City
Head, John Dudley ..... Harmonsburg
Henderson, Joseph Hugh ..... Vanderbilt
Hilgendorf, William B. ..... Meadville
Hoover, Leonard Hyskell ..... Irwin
Humes, John Jackson ..... Johnstown
Hurst, Alfred Russell ..... Sewickley
Jacoby, Joseph Harry ..... Aspinwall
Jenkins, Susan Marie ..... Butler
Jones, Charles Luther ..... Pittsburgh
Kahle, Loren J. ..... Oil City
Kerr, Charles Todd ..... Marienville
Kerr, Norwood William ..... Meadville
King, Helen Elizabeth ..... Uniontown
Kinnear, James Wesley, Jr. ..... Pittsburgh
Kraschneske, Ella Henrietta ..... Erie
Kruse, Edna Dorothy ..... West Valley, N. Y.
Laffer, Cornelius Callender, Jr. ..... Meadville
Lawhead, Guy Henry ..... Clearfield
Levine, Abraham William ..... Pittsburgh
Levis, Harold Stewart ..... Clarion
McCafferty, Thomas Bowles ..... Sharpsburg
McClelland, Charles Kenneth ..... Meadville
McKinley, George Alexander ..... Meadville
McKinney, Gladys Ellene ..... Meadville
McMurren, Elmer LeRoy ..... Edinboro
Manning, Howard Havens ..... Meadville
Mason, Robert Elliott ..... Oil City
Megahan, Howard Dougan ..... Wilkinsburg
Meredith, George Frederick ..... Pittsburgh
Miller, Helen Duffield ..... Franklin
Miller, Louis Alfred ..... Meadville

Miller, William Francis ..... Pittsburgh
Morris, Harley Jackson ..... Blooming Valley
Nelson, Anna ..... McKeesport
Newmaker, Edith Louise ..... Warren
Nickerson, Ralph Joseph ..... Papillion, Nebr.
Norton, Arthur Leroy ..... Phalanx Station, O.
Ontko, Andrew ..... Uniontown
Owens, Floyd Byron ..... Waterford
Painter, Dale B. ..... Butler
Pappenhagen, Florence Elizabeth ..... Meadville
Parrish, Frank Merrill ..... Reynoldsville
Patterson, Harry Bruce ..... Saegertown
Paulsen, Grace ..... Titusville
Phillips, Lucile Elizabeth ..... Farrell
Pierson, Leon Dewey ..... Warren, O.
Piper, James Young ..... Johnstown
Plumb, Stanley ..... Edinboro
Plummer, Dorothy Jean ..... Oak Park, Ill.
Potter, Edith Prescott ..... Turtle Creek
Prather, Don Kramer ..... Meadville
Preston, John Francis ..... Monessen
Raymond, Gladys Marie ..... Meadville
Reed, Matthew Verne ..... Pittsburgh
Ritchie, DeVere ..... Indiana
Robinson, Alice Beryl ..... New Florence
Robinson, Daniel Sturgeon ..... Uniontown
Robrecht, Hazel Kathlyn ..... Wheeling, W. Va.
Rowley, Richard Floyd ..... Pittsburgh
Ruse, Harold Jesse ..... Monessen
Scannell, John ..... Athens
Scheffer, Paul Kistler ..... Meadville
Schreiner, Frederick ..... Johnsonburg
Severn, William Erskine ..... Clymer
Shaner, Floyd Lawrence ..... Canonsburg
Shriver, Harold Dean ..... Diamond
Skinner, Clifford Weld ..... Ashville, N. Y.
Smith, Laurence Victor ..... Meadville
Smith, Merl L. ..... Geneva
Sprong, Amanda Ernastine ..... Buffalo, N. Y.
Stanford, Madeline Natalia ..... Sheffield

Stanley, Frances Audine ..... South Oil City
Stephens, Dallas Malone ..... Meadville
Stewart, James Garrison ..... Espyville Station
Terpening, Marguerite ..... Edinboro
Thoburn, Helen ..... Meadville
Thomas, Gertrude ..... Meadville
Thurston, Dorothy ..... Meadville
Thurston, Elwood Arthur ..... Franklin
Tillotson, Mildred ..... Corry
Webb, Paul Adam ..... Erie
Williams, Avary Emerson ..... Cochranton
Williams, Harold Elmer ..... East Otto, N. Y.
Wiltsee, Wesley Warren ..... Meadville
Withey, George Lindsay ..... Sloatsburg, N. Y.
York, Zella Marion ..... Corry
Zearley, Lillian Ruth ..... Uniontown

Freshmen, 135.

Special Students.

Jones, Carl Cook ..... Bethany, W. Va.
Jones, George W. ..... Cambridge Springs
Moeller, Leonard Paul ..... Waterloo, Ill.
Smith, Elizabeth Wilhelmina ..... Meadville
Utech, P. Henry ..... Meadville
Special, 5.

SUMMARY.

	Men	Women	
Resident Graduates	5	1	6
Seniors	50	33	83
Juniors	37	29	66
Sophomores	66	47	113
Freshmen	91	44	135
Specials	4	1	5
Total	253	155	408

DEGREES CONFERRED.

June 14, 1916

Doctor of Laws.

Charles Bayard Mitchell

Doctor of Divinity.

Harry Parker Johnson
Wilbur Carter Swearer

Master of Arts.

Floyd Elmer Arnold
Homer Riddle Jacobs
Elizabeth Mae Roberts

Master of Science.

Charles Frank Baker
Frank H. Reichel

Bachelor of Arts Nunc Pro Tunc.

Homer C. Crawford

Bachelor of Arts.

Helen Rose Adams
Ruth Louise Allgood
Dortha R. Angove
William Jefferson Armstrong
Homer Milton Bail
Lawson Greene Bash
Vina Marguerite Beatty
Josephine Elizabeth Best
Tillie Ella Bitler
Robert Allen Blasdell
Jesse Erwin Burns
Ginevra Isabel Campbell
Catherine Carroll
Ralph Newton Kendall
Lee David Kepner
Emma Florence Kightlinger
Ethel Lillian Kleckner
John Glenn Klinginsmith
Paul Flemming Latshaw
Edwin Barnhardt Leaf
Lulu Mae Lydell
Leo Hugh McKay
Helen Pithie Mackenzie
Marion Ruth Miller
Clarence Almerion Nash
Leona Catherine Rial

Mary Carrier Carroll
Helen Cole
Albert Gore Curry
Walter Mark Depp
Homer Emmet Drake
Lewis John Dundon
William Andrew Ellis
Lois Clara Foster
Hazel Mary Gaskill
Helen Haldena Gates
Fred Daniel Gealy
Edith Hall
Daphne Harper
Helen Georgia Hasek
Elmer Wallace Hickman
Ray Earl Hoffman
Ethel Gertrude Hudson
Martha Mae Kelley
Georgia Pauline Roberts
Nellie Genevieve Roberts
Hazel Alma Ross
Margaret Ross
Fred Henderson Sanner
Walter Leland Scott
Sankey Lewis Sheets
Louisa Crayne Smith
Margaret Elizabeth Smith
Dorothy Merle Stebbins
Charles Howard Stevenson
Anna Strong
Blanche Taylor
Bernice Thoburn
Emma Goodwill Waring
Charlotte Whipple
Edith Mary White
John Laing Wise
Charles Reimond Wolf

Bachelor of Science.

Charles Arthur Aey
Fred Hughes Amon
Samuel Bell, Jr.
Seeley Franklin Campman
Raymond Andrew Cox
Frank Rumsey Dickey
Florence Downing
Harold Vernon Harper
Curtis Corydon Johnson
Ernest Fitchard Ling
Bailey Courtney McLean
David Roy Mellon
Albert Francis Munhall
Benn Elwin Nelson
Norman E. Phillips
Harry H. Pierson
Harry Paul Rankin
Earle Lyons Reed
Wilbur Whippo Reis
Robert L. Rhoades
LaMarr Ritchie
Guy Merle Runninger
John Woolson Tear
M. Lester Witherup

PHI BETA KAPPA.

ETA CHAPTER OF PENNSYLVANIA.

Chartered September 2, 1901.

OFFICERS.

President.

President William H. Crawford.

Vice President.

Hon. John J. Henderson.

Secretary.

Professor William A. Elliott.

MEMBERS INITIATED IN JUNE, 1916.

From the Senior Class.

Helen Rose Adams
William Jefferson Armstrong
Robert Allen Blasdell
William Andrew Ellis
Edith Hall
Harold Vernon Harper
Martha Mae Kelley
Edwin Barnhardt Leaf
Leo Hugh McKay
Anna Strong

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